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HISTORY OF COMMON SCHOOL EDUCATION

AN OUTLINE SKETCH

BY

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PREFACE

THIS book aims to give, as clearly, concisely, and concretely as possible, such information regarding the history and development of the common or non-professional school as will most aid teachers and others to an intelligent understanding of the common school of to-day, its nature and functions, its relations to other institutions, educational and otherwise. Along with this it aims to give in outline an account of the development of the science and art of common school education that will aid the teacher in working out effective methods of instruction and organization. The book, it will be seen, is planned in accordance with the conviction that the adequate professional preparation of the teacher involves a knowledge of the history and development of the school as an institution as well as a knowledge of the development of educational theory.

My aim has been to bring the facts adduced to focus upon the history of common school work in America. For this reason more space than usual has been assigned to England and less to Germany, for although most of the current educational philosophy had its origin in the latter country, it is chiefly in the former that the earlier history of the American schools is to be traced.

In writing the book I have followed the conviction that opinions based upon a fresh study of original sources would be of value; hence I have used such of the literary and other records of Greece, Rome, and medieval Europe as were accessible. The matter of the book is derived mainly, however, from secondary sources. Confining myself to those authorities upon whose works I have drawn most extensively, I wish to acknowledge my indebtedness for the Greek period to Dumont, Girard, Hatch, Grasberger, and Sussehl; for the Roman to Boissier and Jullien; for the Gallo-Roman to Denk; for the medieval to Specht, Paulsen, Leach, Rashdall, De Montmorency, and Mullinger. For information on schools and school-work in America I am most indebted to 'The Making of Our Middle Schools,' by Elmer E. Brown, to Barnard's *American Journal of Education*, and to the publications of the U. S. Bureau of Education.

The basal studies for the earlier chapters were made during a summer's sojourn at Harvard and during longer periods of work at Leipzig and Clark Universities. I am indebted for aid and encouragement to President Hall and other members of the last-mentioned institution. For criticism and suggestion on the first chapter I am indebted to Professor Arthur O. Norton of Harvard.

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HISTORY OF COMMON SCHOOL EDUCATION

CHAPTER I

THE SCHOOLS OF THE GREEKS

THE greater number of the tastes and pursuits that characterize us as a civilized people have been passed on to us, not from our German or Anglo-Saxon or Celtic forefathers, but from a race that flourished two or three thousand years ago, chiefly in the lands that lie within and about the Ægean Sea. Along with this civilization we have inherited from them the institution by which the sciences and arts which characterize it are handed down from generation to generation, the non-professional school.

These people, the Greeks, were remarkable for their intellectual keenness and eagerness, and particularly for their exquisite sensitiveness to beauty and the consummate skill which enabled them to gratify it. But just as the Greeks were, on the whole, distinguished by these qualities from other races, so were the Athenians of the fourth and fifth centuries B.C., from the other Greeks. It is among the Athenians that that Greek culture which has remained the basis of the culture of all great subsequent civilizations of

Europe, Asia Minor, Africa, and America attained its highest development. And it is in the history of this people that we first find standing forth clearly the prototype of the modern elementary school. In stating this it is not forgotten that the school was not made, but grew, and that, in stages more or less embryonic, it is found earlier not only among other Greek peoples but in the older civilizations of Egypt and the Orient to which the Greeks were so much indebted. Nevertheless, beyond the Athenian period of the fourth and fifth centuries the story of the school becomes relatively vague and discontinuous. On the other hand the clearly marked historical continuity between the Athenian schools and those of to-day, and the similarities existing between these as to aim and course of study, seem to distinguish the above mentioned period as the most suitable at which to take up the study of the modern non-professional school.

“Greek education,” writes Hatch, “passed from Greece into Africa and the West. It had an especial hold first on the Roman and then upon the Celtic and Teutonic populations of Gaul; and from the Gallican schools it has come, probably by direct descent, to our own country and our own time.”

THE CONDITIONS OF DEVELOPMENT

The geographical and other conditions in Greece, particularly in those regions lying toward the south and the east, were exactly of such character as to favor a remarkable efflorescence of human culture. The irregularly indented shores gave abundant access to

the Ægean, whose waters afforded not only communication with alien civilizations but free intercourse among the numerous Greek states, which, in many instances isolated by the mountains or by the sea, had maintained a greater or less measure of independence.

If, as Wordsworth,¹ Shaler,² and others teach, the mountains and the sea train and inspire a people to the attainment of the blessings of liberty and civilization the marvelous achievements of the Greeks are in part at least explained, for probably nowhere do these geographical features more abound. It is these which account for the small size of the Greek states, and this smallness conduced to their rapid political development toward a democracy which exercised in a high degree an intellectually stimulating influence upon the members of each. "So soon as they [the Athenians] got rid of their despots," writes Herodotus, "they became by far the first of all."

In accounting for the rise of Greek civilization some would add to this peculiar combination of political independence with facility of commercial and cultural intercourse, the beauty of natural surroundings. In Athens these political, commercial, and geographical conditions, together with the wealth and leisure of the upper class, account in no small measure for the development of the brilliant civilization of the Periclean age amidst which existed the Greek schools concerning which we have most information.

¹ See the sonnet, 'Thought of a Briton on the Subjugation of Switzerland.'

² 'Nature and Man in America,' pp. 28 and 168.

The population of Athens was made up of three distinct classes: first, the native citizens (the wealthier among them being landholders), who jealously restricted to themselves all political privileges attaching to membership in the democracy; secondly, aliens largely engaged in industry and commerce; thirdly, the slaves, who constituted over seventy per cent. of the entire population. Amid this population there existed three classes of teachers and of schools for boys:—the Grammatists, who taught reading and writing in the elementary school; the Citharists, who taught in the music school; and the Pædotribes, who conducted the physical exercises in the palestra. All classes of the people seem to have had more or less instruction in elementary reading and writing. The music school seems in the time of Pericles to have become an institution giving secondary instruction, and was attended for the most part by the children of the leisure classes.

The origin and development of these schools and the character of their courses of study will be in some measure explained if we note certain features of the social life of the early Greeks.

EDUCATIONAL FEATURES OF THE SOCIAL LIFE OF THE EARLY GREEKS LATER ORGANIZED IN THE WORK OF THE SCHOOLS

1. *Music*.—It is difficult for us to appreciate the importance which the Greeks ascribed to the art of music, a composite of arts distinguished by us as poetry and music. It was a chief form of entertain-

ment in the home and at social gatherings, where the lyre was passed from hand to hand as each entertained the rest with a song. Not only were the Greeks peculiarly sensitive to the subtle beauties of tone and rhythm but they attached great importance to the content of their poetry. The writings of Plato and Aristotle abound in quotations from the poets.

Among the primitive Greeks the function of the poet was not merely to entertain but to instruct. Greek mythology is largely the result of the attempts of the poets to account for natural phenomena by ascribing them to the agency of anthropomorphic beings. In poetry was embodied their history and their science.

With the development of the intelligence of the Greeks the didactic function of the poet was in part usurped by the philosophers, who sought more natural causes for physical phenomena. Yet the early philosophers usually expressed themselves in verse even when, as in the case of Xenophanes, they were attacking the older poetry as teaching serious and harmful errors.

Moreover, poetry performed much the same function among the Greeks as religion with us. Christianity is with us so eminently a center of moral influence that it is hard for us to realize that this was not so with the religion of the Greeks. Its main purpose was merely to enable men to avoid the anger of the gods. For that moral stimulus and direction that we seek in religion the Greek turned to poetry.

The earliest poets must have recited their own

compositions, and in later times "The lyric and dramatic poets taught with their own lips the delivery of their compositions and so prominently did this business of teaching present itself to the view of the public that the name *Didaskalia*, by which dramatic composition was commonly designated, derived from thence its origin."

Again music, like gymnastic, had become intimately associated with the religion of the Greeks. It became an important part of the religious ceremonies in which it was incumbent upon all to join. "There existed a multitude of sanctuaries in the Greek land," says Curtius, "whence issued forth an impulse toward mental culture and popular exercise of the mental powers. Thus in the land of Arcadia, *Artemis Hymnia* was from a primitive age highly venerated by all Arcadians. Her feasts were celebrated with song, and from her temple went forth those ordinances which made the cultivation of music incumbent as a sacred duty upon all the inhabitants of the land."

The importance of music in religion and as a means of entertainment in the public and private social life of the time, together with its intrinsic worth, embodying as it did, often in supremely beautiful form, the most precious of the culture possessions of the race, goes far toward explaining why music was the first of the liberal arts to be made an object of systematic study by the Greeks, and why the earliest of the institutions which grew up among them for the systematic instruction of the young were music schools.

2. *The Declamation and Exposition of the Rhapsodes*.—A function similar to that performed by the teacher in the music school was performed for the general public outside of the school by the rhapsodes. In order that their hearers might better appreciate the poems which they recited, the rhapsodes were accustomed to preface their performances with explanations. "Very true, Socrates," says the rhapsode, Ion, in Plato, "interpretation has certainly been the most laborious part of my art; and I believe myself able to speak about Homer better than any man; and that neither Metrodorus of Lampsacus, nor Stesimbrotus of Thasos, nor Glaucon, nor any one else who ever was, had as good ideas about Homer as I have or as many."

3. *The Professional Teaching of Reading and Writing by the Scribes*.—In the earliest stages of the introduction of the art of letters among a people it is usually practised professionally by scribes. Hence these would naturally be the first teachers of the art. That the profession of the Greek elementary teacher is an outgrowth of that of the scribe seems to be indicated by the fact that he is called by the same name, 'grammatistes,' i.e. 'scribe.' The word is used in this latter sense in Herodotus and elsewhere. Jowett translates 'Charmides,' 161 D, as follows: "And does the scribe write or read, or teach you boys to write or read your names only?"

Demosthenes speaks of the two functions of scribe and teacher as being exercised by members of the same family.

Protagoras from being a scribe became an elementary teacher.

4. *Military Training and the Sacrificial Games.*—Other educational features of Greek life which antedated the school were courses of military training and the related athletic games. The cultivation of the physical strength and military prowess of its citizens was of vital importance to the security of the primitive Greek state. It was apparently for the more systematic and effective prosecution of this work that the gymnasium was established. This is the view held by Lucian, writing in the second century A.D. He has Solon state its purpose to Anacharsis, the Scythian, thus, "If ever our young men have need to make use of their skill in armor they are already experienced. It is certainly very evident that a person so trained, upon grasping an enemy, will more quickly trip and throw him. . . . We provide all these exercises for our youth, my friend, in anticipation of a contest in arms, and from the fact that they have been fully trained, we think that we have for our service better men." In the sketch of a system of education which Plato gives in his 'Laws' he states, "Under gymnastics we place all the exercises relating to war." The custom was no doubt made more permanent through the fact that these exercises became associated with the worship of the gods. The steps by which this took place are thus described by Curtius, "As then the persons in immediate service of the divinity, as the animals and the fruits of the earth which were offered up to the gods, were each after its

fashion to be of blameless perfection, so, too, was the youth of the land, when presenting itself to the gods, in their honor joyously to enfold all its gifts of body and soul; while those marked out as the best were to receive the sacred wreath as a token of their worthiness to approach the gods in a pre-eminent degree."

But it would probably be a mistake to ascribe the origin of these different educational institutions to single definite sources. The further back these musical and gymnastic exercises are traced the more intimate their connection seems to be. The manœuvres performed in honor of the gods were accompanied by music and poetry. Grasberger says that the dance at sacrifices in honor of the gods was an exercise from which developed the gymnastic training of youth, because an important influence upon the human heart was ascribed to just this union of poetry, music, and dance.

In conclusion it should be noted that each of the features of early Greek life which have been mentioned is related closely to some one of the schools named above. Thus the profession of the grammarist probably came into existence through a process of differentiation from that of the scribe, while the work of the music school was apparently a systematization, and adaptation to the needs of the young, of instruction which was afforded in earlier times to the people as a whole by the poet and possibly by the rhapsode. And the work of the palestra was similarly related to the military training and religious festival exercises of the more primitive Greeks.

GENERAL FEATURES OF ATHENIAN SCHOOLS

In entering upon a more detailed description of these elementary schools of the Athenians, it is important to note that they seem to have occupied neither so large nor so definite a place in the social whole as do the schools of our time. Girard says, "It is probable that the Athenians did not carry into the organization of school-work that vigorous attention to detail which the customs of modern life and our extended programs of study require us to put into it. The school, moreover, was not a prison; one entered or left as he wished. In the time of Socrates it was, notwithstanding the prohibitions of Solon, a place frequented by men of all ages. The children came and went among the visitors, whose conversation disturbed neither their work nor the instruction of the master. Their lesson recited, they left or continued to study in the company of their comrades without being required to consecrate so many hours to gymnastic, so many to music, and so many to literature. . . . As for vacations, there were none. . . . Their minds not being overwhelmed by study did not feel the need of recuperating as after continued and excessive labor."

The elementary schools were invariably private enterprises, receiving no financial support and practically no supervision from the State. As regards State supervision and regulation and as regards organization the work of these schools seems to have been about on the same level as the instruction in

piano-playing or dancing given to-day. Building and equipment varied, of course, according to the amount of fees paid by the patrons. * School furniture as represented in vase-paintings consists chiefly of stools for pupils and assistants and a seat with a back, 'thronos,' for the master. * Schools were open from dawn to dark. Boys of slave-holding families came accompanied by their attendants, the pedagogues. Sometimes the pupils met and marched in a body to the school.

There were writing schools for even the poorest classes. Protagoras, in his early days, it is said, taught boys their letters in the street.

SOCIAL RANK OF THE TEACHER

The teachers of these schools seem to have been regarded usually as of inferior social rank. "We ourselves," says Aristotle, "treat the professors of these arts [singing and playing] as mean people." Of one who was missing, the saying in Athens ran, "Either he is dead or has become schoolmaster." Lucian represents kings and satraps in hell as despoiled of their riches and forced to maintain themselves by teaching reading and writing. Epicurus complains of Nausiphanes, "He abused me and called me a schoolmaster." Demosthenes in attacking Æschines repeats again and again the fact that his father was a schoolmaster, and he is careful to emphasize the fact that he was only assistant and that in a school of the lowest order, a reading and writing school.

EXTENT TO WHICH THE SCHOOLS ARE DIFFERENTIATED

Some at least of primary schools just referred to were evidently distinct from the music schools. This is indicated in a passage in Plato, "And is it not best to understand what is said, whether at the writing master's or at the music master's or anywhere else . . . as quickly as possible?" Yet it is probable that instruction in letters and music was frequently given in the same building and occasionally even by the same teacher. Aristophanes writes as if intellectual education, grammatical and musical, was obtained in one place and physical training in another, "To what teacher's school did you go when a child? . . . What style of wrestling did you learn in the school of the gymnastic master?" On each side of the Douris cup is represented a teacher of letters and a teacher of music, who is apparently one and the same individual.

COURSE OF STUDY AND METHODS IN THE SCHOOL OF THE GRAMMATIST

The Greeks seem first to have established schools for the study of music. Yet, according to Girard, "In spite of this anteriority of music it was not with it . . . that education began. The child received musical instruction only when he had learned to read and write." The Athenian child's school education began with the study of letters under the grammarist. The alphabetic method was followed. Fragments of a tile have been found in Attica on which are stamped

the syllables, ar, bar, gar; er, ber, ger, etc. The comic poet Callias wrote a letter play in which the *dramatis personæ* were the letters of the alphabet. It contained a spelling chorus which seems to have been a reminiscence of school experiences; beta, alpha, ba; beta, ei, bē; beta, eta, bē, etc. Similarly on the body of a bottle-shaped vase, around the foot of which was printed the alphabet, were the following letter combinations:—bibabube, gigaguge, zizazuze, mima-mume, pipapupe, etc. Some authorities consider this a charm; others believe it to be one of the school exercises in pronunciation.

The pupil learned to write by tracing and later copying the exercise set up for him by the master. Both wax tablets and papyrus were used as writing material. The art of calculation, hindered by their cumbersome system of notation, never attained among the Greeks a high degree of development. Yet the strong commercial bent of the Athenians necessitated some arithmetical training. "Boy—bring forth my tablets," says Strepsiades in Aristophanes' 'Clouds,' "that I may read to how many I am indebted and calculate the interest." We have no direct evidence that arithmetic was taught in the Athenian elementary schools, but the emphasis laid upon it by such theorists as Plato makes it probable that such was the case.

As soon as the pupil had acquired some ability in understanding written words the teacher gave him verses to read selected from the best poets. The art of letters was apparently so great an aid in the study of the national poetry that after the establishment of

schools for reading, the teaching, at least of some of the non-lyrical poetry, passed from the hands of the music teacher or citharist into those of the grammarist. Girard says, "The oldest, no doubt, was musical instruction, which, in time, became complicated and to which were added reading and writing, then the intensive study of the poets in such a manner that literature was only an extension of music. Under these conditions it was natural that they should not be separated and that the same school should offer to both a common aslyum." "When the boy has learned his letters," writes Plato, "and is beginning to understand what is written, as before he only understood what was spoken, they put into his hands the works of the great poets." The large place which poetry filled in the higher life of the Greeks has already been noted.

On the Douris cup it is the teacher of poetry who occupies the high-backed seat of honor, the 'thronos.' The scarcity and the high price of books, all of which, of course, were manuscript, necessitated methods different from those of the modern school. The pupils frequently made their own texts, copying from the dictation of the teacher. Much time and effort were devoted to the memorizing of poems and selections. In these exercises the pupil seems to have stood before the grammarist, who with open roll before him dictated verse by verse the passage to be memorized. The vase paintings support this view and indicate further that the pupil reads as Plato states (see p. 16) while "sitting on a bench," this posture being

necessitated, possibly, by the cumbersome character of the roll of manuscript. The passages learned under the grammatist were often of a monitory character. "In these," continues Plato, "are contained many admonitions, many tales and praises and encomia of famous men which he is required to learn by heart." Literary masterpieces were not neglected. Xenophon speaks of one who at school had memorized the whole of the Homeric poems.

In the selection of reading matter great freedom was exercised. Not only the great epic and didactic poems were used, but later also comedy, tragedy, and prose. But of all, the poems of Homer were by far the most extensively used. The simplicity of the social and political life which they depicted, the rich variety of character, of incident, and of emotional situations, the rarity of comment, the abundant references to the history, the geographical environment, the theology, and folklore of the Greeks, and the poetic beauty of the whole gave these poems the first place in the curricula of the schools. Various passages show that their value was fully recognized by the Athenians. Plato speaks of "Eulogists of Homer declaring that he has been the educator of Hellas, and that he is profitable for education and for the ordering of human things, and that you should take him up again and again and get to know him."

Among Greek as among modern teachers opinions differed as to the relative advantages of teaching a few entire poems or numerous selections. Plato in his 'Laws' speaks of those who advo-

cated getting "whole poets by heart" and of others who believed in "selecting—from all." Collections similar to those of our modern readers were widely used. One of the most popular of these purported to be a selection made by Chiron for Achilles. Hesiod was believed to have put it into verse. A curious proof of its popularity is afforded by a painted Greek vase in the museum at Berlin, which represents a boy reading from a half-opened volume to two others who seem much interested. On a cubical coffer before the leader is another roll on which is written 'Chironeia,' and on the coffer beneath is the word 'kale.'

THE WORK OF THE MUSIC SCHOOL

When the pupil had acquired some ability to read and write he took up, in addition to the study of literature under the grammarist, also the study of music with the citharist. The work of the primitive music school, as already noted, seems gradually to have differentiated into vocal and instrumental music on the one hand (the latter almost exclusively for purposes of accompaniment) and into the intensive study of poetry on the other. Thus, where the duties of the grammarist and the citharist were performed by two different persons, each seems to have taught literature. This is clearly what is stated in Plato. "And when the boy has learned his letters and is beginning to understand what is written . . . they put into his hands the work of the great poets, which he reads sitting on a bench at school. . . . Then

again the teachers of the lyre take similar care that their young disciple is temperate and gets into no mischief; and when they have taught him the use of the lyre, they introduce him to the poems of other excellent poets, who are lyric poets; and these they set to music, and make their harmonies and rhythms quite familiar to the children's souls." The grammarist, apparently, taught literature in so far as it was read, while the citharist taught the poetry which was usually sung.

There were writing schools for the poor as well as for the rich. The work of the music school being of a more purely cultural character, these institutions were attended for the most part by the comparatively well-to-do classes. Plato makes Protagoras say after describing the school work in music, "This is what is done by those that have the means, and those that have the means are the rich; their children begin to go to school soonest and leave off latest."

Recalling what has already been said as to the importance attached by the Greeks to the content of their poetry, it will be seen that its study under either teacher would involve that of other subjects of the modern school curriculum. The study of the second book of the *Iliad* would constitute, for instance, something of a course in geography. The whole poem was held by the Greeks to be a compendium of their history. Spartans and Athenians, for example, quoted precedents from Homer in their dispute with the Syracusans as to who should lead in the expedition against the Persians. Says Grasberger: "Even

a certain amount of scientific knowledge in geography and astronomy, and especially the most important facts of history, were imparted to the youthful mind in the schools of antiquity through the works of the poets."

Interesting light is thrown on the method of teaching instrumental and vocal music, by vase paintings, particularly those on the Douris cup in the Berlin Antiquarium. Teacher and pupil, each with his lyre, sit facing each other, the former illustrating, the latter imitating and practising. So also on the vase of Pistoxenos. In a painting on one of the London amphoræ (Girard, p. 111) the pupil is apparently accompanying the teacher, who is singing. The words are naïvely pictured issuing from his lips.

THE TRAINING IN THE PALESTRA

An important characteristic of Greek school education was the careful attention paid to the physical training of the young. Though this probably had its origin in the military necessities of the people (see p. 8), the work came to be valued for its effect upon the morals and even the artistic tastes of the young. Plato suggests that the young are sent "to the master of gymnastic in order that their bodies may better minister to a virtuous mind and that they might not be compelled through bodily weakness to play the coward in war or on any other occasion." The palestræ, unlike the gymnasia, were private institutions and were often named after their proprietors. Here the

young Athenians were trained in running, wrestling, jumping, and in throwing the discus and the javelin.

CENTERS OF EDUCATIONAL INFLUENCE OUTSIDE OF THE
SCHOOL

With the conclusion of the work in the palestra the boy of the more aristocratic class passed from under the guardianship of the pedagogue and entered upon a course of systematic physical training in the gymnasium. His work in the music school having been concluded, such intellectual training as he received was derived from listening to the discussions of philosophers and others in the gymnasia and other public places, from attendance at the theater, in the law courts, the assembly, public ceremonies, and from other sources of educational influence in which Athens was peculiarly rich. Æschines in his oration against Ctesiphon says, "It is not, men of Athens, you know it well, it is not the palestra, the seminary, or the study of liberal arts alone, which form and educate our youth. Of vastly greater value are the lessons taught by the honors publicly conferred!" Some of the sources of this extra-school education are referred to by Lucian. "We instruct them thoroughly in the common laws. These laws we have transcribed in large letters and have set them up in public places for all to read. The inscriptions give orders concerning that which it is fitting and proper for young men to do and that from which they should abstain. Further we urge upon them to seek the companionship of the noblest and best men of the State, from whom

they learn to speak properly, to act justly. . . . We also assemble the young men in the theater and by the influence of tragedy and comedy publicly train them to contemplate both the virtues and the vices of their ancestors that they may turn from the latter and may seek eagerly to emulate the former."

THE NEW EDUCATION IN THE ELEMENTARY AND HIGHER SCHOOLS

During the fifth and fourth centuries B.C. changes were taking place in the political and social life of Athens which not only modified elementary education, but led to the development of a system of advanced education analogous to that of the modern university. The Athenian had been guided in his conduct by following social and religious tradition and the laws of the state. The excitements of danger and of triumph in the Persian wars resulted not only in an intensifying of national consciousness, but in an increased consciousness of the worth of the individual. In individual and in corporate life men were guided less and less by tradition and more and more by their individual thoughts and desires. This affected school education as it did other features of social life. The traditional course of study was no longer so closely adhered to. Even during the fifth century changes had crept in which excited alarm and displeasure. Aristophanes in the 'Clouds' compares unfavorably the newer with the older school music. "Their master would teach them, not sitting cross-legged, to learn by rote a song, either 'Pallas, Ter-

rible Destroyer of Cities' or 'The Shout Sounding Far,' raising to a higher pitch the harmonies which our fathers transmitted to us. But if any one were to play the buffoon, or turn any quavers like these difficult turns the present artists make after the manner of Phrynus, he used to be thrashed and beaten with many blows, as banishing the Muses." Nevertheless the modification of the existing course according to the felt needs of the time continued. By the middle of the fourth century drawing, geometry, and the related sciences had been added to the reading, writing, literature, and music of the old curriculum, while from the study of literature had branched off the subject of grammar, in the narrower sense of the term.

Another and much later result of this intellectual awakening was the organization of a more advanced education in the schools of philosophy and rhetoric, which later united to form institutions of higher learning, the so-called 'universities' of Athens, Rhodes, and elsewhere.

THE SCHOOLS OF PHILOSOPHY

Just as many to-day would fear the effect upon public and private morality of a general disbelief in a future life of retribution or reward, so many of the more thoughtful among the Athenians were alarmed at the growing disregard of the traditional safeguards of conduct. It was partly in an attempt to supply a substitute for these that Socrates inaugurated a new movement in philosophy. Truth, he believed, is a

safe and sure guide to conduct. And this truth lies within the grasp of every man, although it can be attained only through painstaking effort. A fruitful source of error and evil conduct has been that men have been too indolent to search out the truth and content to be guided by mere opinion. The truths that are a safe guide in conduct, he held, are those that apply not simply in particular instances, but in all cases. In other words, the most important truths are the general truths. The process of eliminating from our thought what was merely individual and accidental was facilitated through the mutual criticism of the dialogue. Hence with the general purpose in view of aiding others as well as himself he was apparently ready to discuss anywhere with any one any topic the discussion of which promised to contribute to the sifting out of truth from error.

His follower, Plato, on the other hand, arranged his teachings into something like a system and taught in a definite place, the Academy. At his death his disciples constituted so organized a body that he was able to bequeath the headship over them to Speusippus, his nephew. Fees were collected by the latter, buildings were erected, classes organized, and a definite school of philosophy, the Academy, came into existence. Similarly in the same city somewhat later, other schools of philosophy sprang up, the Peripatetic, the Stoic, and the Epicurean, founded by Aristotle, Zeno, and Epicurus, respectively.

These four schools together with those of the rhetoricians, which will be discussed later and which in

a similar manner seem to have become resident permanent institutions, formed the nucleus of what afterwards became under the Roman empire something like a great national university. For this reason and because one or the other of these philosophical systems influenced more or less directly the school-work of subsequent times, mention will be made here of one or two of the characteristics of each.

Socrates' opinion as to the great importance of general ideas was much elaborated by his disciple, Plato, the founder of the Academic school. While the former held that the wholly true universally valid concepts could be found by merely culling out from thought all that was individual and accidental, Plato, in his suggestive, semi-poetical manner, ascribes to them self-substantial separate reality. They are the true realities of which individual things are but the imperfect copies, and they existed before the latter. Being such they were to be attained not through the comparison and elimination of the qualities of individual things but through a process of speculative intuition.

To Aristotle, the founder of the Peripatetic school and the greatest and most influential of all ancient philosophers, truth was to be arrived at through the investigation of individual things. General concepts do not exist independently of individuals but in them. This question as to the relative reality of individuals or classes on which Plato and his pupil Aristotle differed became the center of philosophical discussion during the scholastic period of the Middle Ages.

Aristotle, in addition to many other philosophical and scientific achievements, summed up, supplemented, and systematized the results of the labors of his predecessors in the art of arriving at the truth through reasoned argument in the new science of logic, his treatise on which has ever since remained the standard on that subject. Though the Peripatetic school waned after the death of its founder, the writings of Aristotle have exerted a predominant influence upon the thought of succeeding times. To the mediæval scholastics he was the infallible authority on things worldly as were the Scriptures and the church on spiritual questions.

Of the remaining schools, the Stoic, founded by Zeno, was the most important both in its influence upon conduct and in its relation to non-professional education. In order that he might reach not merely the select few but the masses, Zeno established himself not in the retirement of the groves of the Academy or the Lyceum as did Plato and Aristotle, respectively, but in the 'Stoa Poikile' in the center of the busy life of the city. The most eminent representative of Stoicism was Chrysippus, the third head of the school. To the Stoic the great end of life was virtue, which he defined as living in conformity with nature or with natural law. The attainment of this end involved a course of study, for in order to live in conformity with nature it is necessary first to learn to know nature through the study of physics. After we have acquired these facts about nature we must be able to use them in arriving at general truths or

principles. The ability to do this is acquired in the study of logic. Finally we must learn through the study of ethics to apply these truths in matters of conduct. Like Socrates the Stoics found a source of wrong conduct in the workings of men's minds. Instead of their actions being controlled by the intellectual truths just referred to they were misdirected by the passions. Hence the wise man is he who ignores the emotions and is guided in his acts solely by his intellectual insight.

To Epicurus, the founder of the Epicurean school, the great end of life lay in the securing of happiness. True happiness, however, was to be found only in practice of reflective insight, that is, of virtue.

EDUCATIONAL THEORISTS

Plato and Aristotle are among the earliest writers on education. The former, in his 'Republic,' sketches an ideal system of education. He investigates the philosophical principles which make music and gymnastic important means of education. By means of these principles he determines what of music and gymnastic should be utilized and what rejected in the education of the young and what relation should exist between these two branches. Poems which ascribe vices to the gods or in any way expose them to disrespect are to be rejected. Musical modes soft and convivial like the Ionian and Lydian, or mournful like the Mixo-Lydian, are to give place to those which properly imitate the tones and inflections of a brave man in the act of war, etc. Due propor-

tion is to be maintained between music and gymnastic, and the latter is to contribute not merely to physical but to mental development.

The titles of the works in which Plato and Aristotle discuss education, the 'Republic' and 'Politics,' respectively, indicate that they consider it as merely a feature of the life of men organized into a state. In Aristotle's opinion education should be public, i.e. regulated by the state, and it should be liberal, not restricted by the requirements of some profession. Its great service is that it fits one for the profitable employment of leisure. In his discussion of the course of study—letters, gymnastics, music, and drawing—he does not differ essentially from Plato.

THE SOPHISTS AND THE SCHOOLS OF RHETORIC

At the age of eighteen the young Athenians of all but the poorest class entered as ephebes upon the two years' course in military training provided by the state. The frequent drills of this period, the marches to the frontier, the sojourn in camps and forts, and the police and sentry duties still left the ephebes a good deal of leisure to profit by the educational opportunities which life in Athens afforded.

Owing to certain political and social changes, however, this unsystematized intellectual culture became inadequate. As membership in the legislative assembly was extended to all citizens and as the decision of disputes at law was handed over to one or another of the bodies of five hundred ordinary citizens, the young Athenians began to realize keenly the need of

systematic training in the art of oratory and of debate. Hence when teachers appeared who professed to give this training their services were eagerly sought. They are known in our time as the sophists. Plato describes two sophists as "most skilful in legal warfare; they will plead themselves and teach others to speak and to compose speeches which will have an effect upon the courts." Again Plato represents the sophist Protagoras as saying of a young man ambitious of political preferment who sought instruction from the latter, "If he comes to me he will learn that which he comes to learn. And this is prudence in affairs private as well as public; he will learn to order his own house in the best manner, and he will be able to speak and act in affairs of state." At first they gave only individual instruction, chiefly in rhetoric and dialectic, but gradually the number of subjects taught increased and their work was organized into that of definite institutions of learning, the rhetorical schools. (See Cicero, 'Brutus,' chap. viii.) The amalgamation of these schools of philosophy and rhetoric into an institution resembling somewhat a modern university, took place by slow stages and was consummated only after Athens had become incorporated in the Roman empire.

Unfortunately the organization of the schools of philosophy, while economizing the effort devoted to teaching and learning, seemed to restrict originality of thought. In the rhetorical schools less and less attention was paid to training to meet the demands of actual life; indeed with the political subjection of

Athens to Macedonia in the fourth, and to Rome in the second century, the needs which had led to the establishment of these schools lost their urgency. The schools of philosophy turned from original investigation of great problems to the exposition of the views of their respective founders. The schools grew, however, in numbers. The same conquests which had cost Athens her political independence enormously widened the influence of her culture. "Out of the ruins of the Macedonian universal empire there grew up five monarchies in which Greek was the language of the court and the government, of inscriptions and coinage, and of the educated classes, and in some of which Grecian art, literature, and learning reached a high development." With the loss of military power and independence Athens claved the more closely to that which still was left, her position as the world's great center of culture. With her freedom the age of great inspiration had passed away forever, but it was succeeded by an age only less brilliant of savants, of commentators, of rhetoricians and sophists. "These," says Petit de Julleville, "seemed to make their rendezvous at Athens from the extremities of the earth, attracted, no doubt, by her famous name, her glorious history; her boasted monuments and the memory still living of so many great men; but sensible also to the beauty of situation, the charm of climate, to the politeness of manners, to the pleasures of all kinds which this city, freed of ordinary business cares, offered to the prolonged leisure of its inhabitants." With them came great numbers

of students from many different foreign countries. Prominent among the student body were the ephebes of Athens. This body had meanwhile been undergoing great changes. The political misfortunes of Athens had made it increasingly difficult for any but the wealthiest young men to devote two years to military training. As Athens sank into the position of a mere province the custom became of less and less practical importance. Hence the period was reduced from two years to one, later service was made entirely voluntary and the ephebic body became correspondingly few in number and aristocratic in character. Later still, foreigners, presumably of great wealth, were admitted. With the waning of the importance of Athens in world politics and the centering of the patriotic pride of her citizens upon her rank as a center of learning, attendance at the famous schools came to be prescribed as part of the duties of the ephebic year. With the further development of the university the ephebic body degenerated into something similar to a modern students' society.

The combination of the different schools into a single institution and the recognition of this as a great imperial university would naturally be furthered by the favor and support of the imperial government, especially during the reigns of Hadrian and the Antonines. After several periods of alternating decline and revival the university was finally closed in 529 A.D. by Justinian.

RÉSUMÉ ON THE SCHOOLS OF ATHENS

The work of the Greek non-professional schools consisted essentially of an organization of educational influences and activities that had long been operating in the family and in the general social life of the people. The school did not supplant, but merely supplemented, the earlier educational institutions.

The centers of cultural influence in ancient Athens, and particularly during the fifth and fourth centuries B.C., were unusually numerous and powerful. The culture of the Greeks was to a greater extent native than is the case with that of modern civilized peoples of Western Europe and America. It was not associated with a foreign tongue. For these reasons the school was probably not even so essential a factor in education in Athens as it is in modern civilization.

The schools of the Athenians did not have the elaborate organization of the modern public school. Those schools which gave more than elementary instruction in reading and writing were attended only by the children of a small proportion of the population.

Teachers, both elementary and secondary, seem to have been of inferior social rank.

The two most powerful factors in determining the character of the course of study in the schools were, on the one hand, the tendency to give the child such instruction and training as would best adjust him to the social conditions amidst which he was to live, and, on the other, a tendency to be guided by tradition.

The preponderance of the latter resulted in the maintenance of the so-called 'old education.' The preponderance of the former during the period of intellectual awakening that followed the close of the Persian wars led to the growth of the 'new education.'

This free adaptation of school-work to actual needs not only modified the course of study of the secondary schools, but brought into existence new educational institutions, the schools of the sophists.

CHAPTER II

THE SCHOOLS OF ALEXANDRIA

THE conquests of Alexander disseminated the Greek civilization, which had reached its highest development in Athens, throughout much of Asia and Africa. As a result important centers of learning grew up in Pergamon, Rhodes, Alexandria, and elsewhere. In Alexandria Greek culture underwent certain modifications which it is important for us to note in tracing the history of our non-professional schools.

The Conditions Affecting Alexandrian Culture.—The cultural activities of this later Alexandrian period were strikingly different from those of the age of Pericles.

The difference was due to the decidedly different conditions under which they were carried on. The supreme achievements of the Athenians in art, literature, and philosophy were the work of a free people. The poets and thinkers of Alexandria were under a despotism which made spontaneity of expression impossible. The poetry and art, science and philosophy of Athens were the product of impulses shared in by the mass of the citizens. In Alexandria culture was confined chiefly to a relatively small class, for the most part foreign to the country and patronized by the court. The tone of life in Athens was determined

by one race, the Athenians. In Alexandria Greeks stood with Jews and other Oriental peoples on a similar footing. Finally, some attach importance to the fact that the great Athenians lived in a region abounding in natural beauty, a feature wanting to the sandy shores on which Alexandria was built. Says Mahaffy, "But if as a commercial site Alexandria was unrivaled, we cannot say much for its natural beauty. A sandy region, without wooding, without hills, and a tideless sea, but with no far mountains or islands in sight—what could be more dreary to those accustomed to the enchanting views from the Greek and Asiatic coast towns? We know that the Greeks of classical days said little about the picturesque. Nevertheless its unconscious effect upon their poetry and upon other forms of art is clearly discernible, and perhaps not a little of the unpicturesqueness of Alexandrian culture is due to the absence of this vague but powerful influence. The grandeur of solemn mountains, the mystery of deep forests, the sweet homeliness of babbling streams, the scent of deep meadows and fragrant shrubs, all this was familiar even to the city people of Hellenic days. . . . But the din and the dust of the new capital . . . were only relieved by a few town parks and gymnasias. . . . And, if there was retirement and leisure within the university, it was eminently the retirement among books—the natural home for pedants and grammarians."

These conditions account for the fact that we find in Alexandrian literature, excepting perhaps Theoc-

ritus, little evidence of true poetic inspiration; the poetry is imitative and self-conscious.

The Alexandrian School and the Character of Its Work.—Of the elementary and secondary school work at Alexandria we have no record. It was probably of little importance, for the mass of the people were non-Greek. The great influence of Alexandria upon the culture and school-work of Rome and of later times was the result of the work of the members of a relatively small and exclusive body of scholars and writers, chiefly Greek, living and working under the patronage of the Ptolemies in a great institution of learning known as the Museum. The circumstances under which they worked were, as shown above, unfavorable to original literary or artistic achievement. Their most important contributions to literature are due to the attention they paid to the collection, arrangement, and critical study of the great productions of the earlier Greek civilization.

The first Ptolemy, possibly at the suggestion of his friend, Demetrius, and influenced, perhaps, by the aims of his former master, Alexander the Great, founded a great library in which he collected the writings of the Greeks and of other civilized peoples. With this was connected later a corporation of learned men supported by royal endowment. "The Museum," says Strabo, "is a part of the palaces. It has a public hall and a place furnished with seats, and a large hall, in which the men of learning, who belong to the Museum, take their common meal.

This community possessed also property in common; and a priest, formerly appointed by the kings, but at present by Cæsar, presides over the Museum." If, as some believe, some of these took up the work of teaching, the whole institution would resemble somewhat a modern university. The bringing together of so many manuscripts containing varying versions of the works of classical authors led to great critical activity. Here were produced the first critical editions of Homer. Through this intensive study of classical literature the sciences of grammar and philology were brought to a high degree of development. Thus was formed a body of literary and grammatical erudition which constituted a large proportion of the material of instruction in the schools of Rome and of subsequent civilizations.

Of no less importance were the achievements of the Alexandrian scholars in pure mathematics and in the natural sciences. Here was completed Euclid's treatise on geometry, used even up to the present as a school text. Here the science of algebra was developed by Diophantus, and here also important discoveries in mechanics, geography, astronomy, and anatomy were made by Hero, Archimedes, Eratosthenes, Herophilos, and others. The scientific lore of the schools of Roman and later times owed, probably, its form and substance more to Alexandria than to any other ancient center of culture.

The peculiar culture conditions at Alexandria led, in the first and second centuries A.D., to its becoming the first great center of higher Christian theological

education. Here we find the greatest of those early Christian schools of theology, the successors of which throughout the greater part of the Middle Ages performed in society the function of the general non-professional school.

CHAPTER III

THE SCHOOLS OF ROME

ALTHOUGH this elaboration of Greek culture which took place in Alexandria powerfully influenced the school-work of later times, nevertheless the further history of the schools for the young, the development of which in Athens we have already noted, is to be traced out, not in Alexandria, but in Rome.

A narrow but powerful system of extra-school education and an elementary school for giving instruction, mainly in reading and writing and possibly calculation, had developed among the Romans, in the main, independently of the direct influence of the Greeks, though, of course, the Roman alphabet, among other things, was derived from early intercourse with the latter race. A brief account of this education of the early Romans and of the conditions to which it owed its character will prepare us for the discussion of the secondary school education which they adopted from the Greeks.

EARLY EXTRA-SCHOOL EDUCATION AMONG THE ROMANS

Like the Greeks, the Romans dwelt upon a peninsula extending southward into the Mediterranean Sea. Unlike Greece, however, the country faced the

west rather than the east. "The Italian peninsula," says Mommsen, "resembles the Grecian in the temperature and wholesome air that prevail on the hills of moderate height, and on the whole, also, in the valleys and plains. In the development of coast it is inferior; it wants, in particular, the island-studded sea which made the Hellenes a seafaring nation. Italy, on the other hand, excels its neighbor in the rich alluvial plains and the fertile and grassy mountain slopes, which are requisite for agriculture and the rearing of cattle. Like Greece, it is a noble land which calls forth and rewards the energies of man, opening up alike for restless adventure the way to distant lands and for quiet exertion modes of peaceful gain at home."

In several respects the national characteristics of the early Romans stand out in strong contrast to those of the Athenians. The heroes who figure in Roman folk-lore,—Regulus, Brutus, Horatius, Cincinnatus,—are embodiments of the ideals which to a greater or less degree molded the lives of the early Romans. With them the sense of duty was a strong motive to action and this gave to the life and character of the old Roman a peculiar dignity. While the aspirations of the pleasure-loving Greek centered more and more about the individual, those of the Roman centered more in the family and the state. The intense, though silent, pride in family which prevailed among the Romans, and its great educational significance, are well illustrated in their peculiar funeral customs. The masks of famous ancestors

adorned the walls of the home. Upon the death of the head of the family, actors or others, each wearing the mask and the official robes of some ancestor, mounted chariots and joined the funeral procession to the forum. "There the corpse was placed in an upright position; the ancestors descended from their chariots and seated themselves in the curule chairs, and the son or the nearest gentile kinsman of the deceased ascended the rostrum in order to announce to the assembled multitude in simple recital the names and the deeds of each of the men sitting in a circle around him, and last of all, those of him who had recently died."

Within the household the father possessed sovereign power, extending even to power of life and death over his children. The mother occupied a position of dignity in society. She was not, as among the Greeks, confined to the seclusion of the woman's apartments. As the husband was the master, so was the wife the mistress of the family. Her place was in the chief apartment of the house, where she sat directing the work of her servants. She appeared without fear in public. Everywhere she was treated with respect. Under such parents the Roman boy acquired discipline of manners, knowledge of the language, and the essentials of the historical and religious folklore of the race. He accompanied his father to the field, to the forum, to the house of a friend, to the public festival, and to the council hall. Here he acquired a knowledge of and a taste for those duties to family and country upon the successful performance of which were concentrated the energies of

the early Romans. "Among our ancestors," writes Pliny, "one learned not only through the ears but through the eyes. The young in observing the elders, learned what they would soon have to do themselves and what they would one day teach to their successors." The instruction was thus direct and practical. No thought was given to intellectual culture for its own sake. The Roman despised the luxury of the mind as he did that of the body. "The permanent intercommunion of life between father and son and the mutual reverence felt by adolescence for ripened manhood, and by the mature man for the innocence of youth, lay at the root of the steadfastness of the domestic and political traditions, of the closeness of the family bond, and in general the grave earnestness [*gravitas*] and character of moral worth in Roman life." Admirable as this method of education may seem, it is important to note that it made impossible the attainment of a high degree of culture.

Physical training was, of course, not neglected among a military people as were the Romans, but it was characteristically direct and practical in character. Practice with the sword and the javelin, in swimming and running, in wielding the ax, and in bearing burdens was carried on not to develop symmetrically the body, but to develop efficiency in war. Cicero says of Greek gymnasium training, "Among the Greeks, on the contrary, what an absurd system of training youth is exhibited in their gymnasia! What a frivolous preparation for the labors and hazards of war!"

The Beginning of Elementary School Instruction among the Romans.—It was this strong practical sense that led the Roman to adopt at an early period the arts of reading, writing, and calculation. The Roman books of oracles, the clan registers, and the Alban and Roman calendars are of great antiquity. The story of Virginia and the custom of setting up in public places tablets of stone or brass on which were engraved laws or treaties seem to indicate that these fundamental arts had become subjects of general non-professional instruction in the fifth century B.C. Of the earliest stages of the instruction in these arts we have very little information. In these as in other matters the father seems at first to have been the instructor. Scipio in Cicero's 'Commonwealth' refers to his father as his teacher and indicates the practical character of the instruction he received. "Regard me," he says, "as a true Roman, not illiberally instructed by the care of my father and inflamed with the desire of knowledge, even from my boyhood, but still even more familiar with domestic precepts and practices than the literature of books."

Probably the pressure of other duties led wealthy parents to hand over this work to an educated slave or freedman, and those of moderate means to send their children for this elementary instruction to the schools of the literators. These were usually foreigners or freedmen of the lowest rank of society. The thrifty Cato let out his educated slaves for hire as teachers. The literators seem to have derived only a miserable pittance from their labors. The Romans seem to have

looked down with profounder disdain than did even the Athenians upon the salaried professions. Hence the teachers were supported at first by gifts. This custom did not die out even when fixed fees became the rule. This prejudice accounts for the fact that some teachers "never haggled about remuneration but generally left it to the liberality of their scholars." Plutarch states that the first school teacher to make a fixed charge was Spurius Carvilius, a freedman.

As among the Greeks, the housing and equipment of the school seem to have varied with the wealth and station of the pupils. The houses of even the wealthy Romans were as a rule flanked on the ground floor by shops opening on the street. The ceilings of these shops being often very high, the upper half was sometimes floored off and rented separately. The apartments thus formed were known as 'pergulae.' Teachers frequently rented for school purposes such rooms as these. Hangings were used to separate the school from the stir and noise of the street. A Pompeian fresco shows that in some instances schools were located in porticoes. It was probably on account of their location in public places that they were called 'trivial schools'; hence also the complaints as to the disturbance they created.

The Character of Roman Elementary School Instruction.—There seems to have been no essential difference between the Roman and the Greek methods of teaching the elementary reading, writing, and arithmetic which constituted the course of study in these schools. Dionysius of Halicarnassus, who spent

twenty years of the first century B.C. in Rome, gives what is perhaps the clearest and most concise account of the method of teaching beginners to read. "When we learned to read was it not necessary at first to know the names of the letters, their shape, their value in syllables, their differences, then the words and their case, their quantity long or short, their accent, and the rest? Arrived at this point we began to read and write, slowly at first and syllable by syllable. Some time afterwards, the forms being sufficiently engraved upon our memory, we read more cursorily, in the elementary book, then in all sorts of books, finally with incredible quickness and without making any mistake."

Aside from the Latin translation of the *Odyssey* the reading matter seems to have been largely monitory in character. As among the Greeks, the pupils themselves often wrote, as exercises in writing, the texts used in reading. The Laws of the Twelve Tables, the use of which in the schools, as stated by Cicero, was so characteristic of the severe, practical Roman, were probably used in writing and reading exercises before being memorized. Writing seems to have been taken up after the elements of reading had been mastered. A variety of devices were employed to aid the pupils in the first stages. Quintilian recommends the use of grooves to guide the stylus of the beginner in forming the letters. Seneca refers to the practice, apparently common among teachers, of guiding the hands of their pupils.

The practical Romans attached much importance

to the study of calculation. "The Roman youth," says Horace, "learn by long computation to subdivide a pound into a hundred parts. Let the son of Albinus tell me, if from five ounces one be subtracted what remains? He would have said the third of a pound—bravely done! you will be able to take care of your own affairs. An ounce is added; what will that be? Half a pound." The monotonous sing-song of the arithmetical tables of which Augustine complains, "one and one are two, two and two are four," etc., had, no doubt come down from the earliest times. The clumsy notation of the Romans and their employment of two systems of numeration, the duodecimal for money and the decimal for everything else, made calculation more difficult and more dependent upon mechanical aids than with us. Calculations, as the history of the word shows, were carried on through the use of pebbles or similar objects. Horace mentions the bag of stones as part of the schoolboy's equipment. As is indicated in our use of the word 'digit,' the objects most frequently used were the fingers. They were used with great skill in even complicated operations. Eighteen positions of the left hand stood for the nine units and the nine tens (the Romans had no sign for zero). The corresponding positions of the right hand stood for the nine hundreds and the nine thousands, while 10,000 and larger numbers were expressed by touching various parts of the body. To represent 1, for instance, they bent inwards the fifth finger; for 2 the fourth and fifth; for 3 the third, fourth, and fifth; for 4 the

third and fourth; for 5 the third; for 6 the fourth; for 7 they shifted the fifth; for 8 the fourth and fifth; for 9 the third, fourth, and fifth; for 10 the index finger was bent to the lowest joint of the thumb, making an inverted sigma, σ . This finger reckoning was universal among the Romans and traces of it survive in the game of 'Mora' still popular among modern Italians. The landlord or the merchant reckoned up with his fingers the bills of his patrons in the presence of the latter. The importance of calculation and universality of finger-reckoning are reflected in the following passage from Quintilian. "Knowledge of numbers, assuredly is necessary not only to the orator, but to every one who has been initiated even into the rudiments of learning. In pleading causes . . . the speaker, if he hesitates, I do not say about the amount of a calculation, but if he even betray, *by an uncertain or awkward movement of his fingers*, a want of confidence in his calculations, is thought to be but imperfectly accomplished in his art."

Much use was made of the reckoning board. A common form consisted of seven vertical columns representing units, tens, hundreds, etc., up to millions. The longer section of each column contained four counters, each of which signified 1 when moved toward the transverse column containing M, C, X, etc. The smaller upper section contained one counter, signifying 5 when moved

| | | | | | | |
|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| M | C | X | I | C | X | I |
| ○ | ○ | | ○ | ○ | | ○ |
| ○ | ○ | | ○ | ○ | | ○ |
| ○ | ○ | | ○ | ○ | | ○ |
| | | ○ | | | ○ | ○ |
| | ○ | ○ | | ○ | ○ | ○ |
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

downward toward the transverse column. The number represented in the accompanying figure, for example, is 3,753,609.

Notwithstanding the difficulties of number work, it was in this that the Roman elementary schools seem to have been most successful. Advanced work in the subject could be taken up under a special teacher, the calculator.

The elementary school restricted its attention closely to the bare utilities, reading, writing, and calculation. The institution was common even in outlying parts of the empire. As an indication of this, a bronze tablet discovered in 1876, on the site of a Roman mining village in the mountains of Portugal, asserts that the village teachers (elementary) are to be exempt from the demands of the imperial tax-gatherer—"ludi-magistros a procuratore metallorum immunis esse placet."

For that higher culture that would fit him to share in the pursuits characteristic of highly civilized society the Roman youth of the more aristocratic classes turned to the grammar school or school of literature.

The Beginnings of Secondary (Cultural) School-work among the Romans.—The secondary school appeared among the Romans only comparatively late in their history. There was, indeed, no reason for its existence until there existed in Roman society some degree of that culture which it was designed to impart to the young. "The science of literature," says Suetonius, "was in ancient times far from being in vogue at Rome; indeed it was of little use in a rude state

of society, when the people were engaged in constant wars and had not much time to bestow on the cultivation of the liberal arts." The striking thing about the Roman secondary school is that the culture, which conditioned its existence, was foreign; and this has remained true of the secondary schools of all nations which have appeared in the subsequent history of Western civilization.

The culture, the introduction of which made the secondary school necessary, was that of the Greeks. But of the numbers of Greek philosophers, musicians, scientists, grammarians, and rhetoricians that invaded Rome at the time of the Punic wars, only the two last gained a foothold. The work of the others seemed to the Roman to have no relation to the practical ends of life. The more immediate and special conditions which account for the organization of the study of grammar and rhetoric and the consequent establishment of Roman secondary and advanced schools were various. In the first place, the increase of wealth and leisure among the Romans had created a need for a more advanced intellectual and esthetic culture than their own crude art and literature afforded. About the middle of the third century B.C., Livius Andronicus, a freedman, born in the Greek territory south of Rome, but thoroughly familiar through long residence among the Romans with their life and character, began to present at their religious festivals translations of the Greek tragedies. The drama, though the form of Greek literature latest to develop, was admirably adapted to make a direct and

powerful appeal to a comparatively uncultivated people. Later, Livius Andronicus translated from the Greek what would be to the Romans, perhaps, the most fascinating of all poems, the *Odyssey*. "When I was little," writes Horace, "Orbilius, my master, dictated to me the poems of Livius." The interest thus aroused led to a desire to know Greek literature in the original, to the employment of Greek tutors, and thence to the development of secondary schools for the study of Greek grammar and literature. Ennius, another Romanized Greek poet, supplemented the work of Livius. Both taught Greek language and literature, but probably as tutors and not as regular schoolmasters.

At the same time this interest in Greek literature was being aroused in another way. Those Romans who found ability to speak and write Greek necessary in political, commercial, or social intercourse, employed Greek language-teachers known as *grammatici*. As these Greeks were accustomed to use literary masterpieces as texts the attention would naturally pass from the language to the literature. Thus from being teachers of language the *grammatici* tended to become teachers of literature or grammar, in the widest and then usual sense of the term.

Another cause which contributed to the growth of these schools and which powerfully influenced the character of their work was the growth of interest among the Romans in the study of oratory. The Romans had always attached a high value to the art of persuasive speech. Under their republican institu-

tions the man whose eloquence could influence the minds of others was the man who possessed political power, and power was the goal of the ambition of every true Roman. Oratorical skill was also, as formerly in Athens, an important safeguard to life and property. Cato, it is said, had to defend himself before the courts on fifty different occasions. The Greeks, having felt this need for oratorical training much earlier, had already produced a system of training to meet it.

At first this rhetorical training seems to have been given in Rome in the non-professional grammar schools. Later the work was differentiated, the important preparatory literary instruction being given in the grammar school while training in oratory was given in higher schools more professional in character, called schools of rhetoric. We have then in Rome in the first century B.C. a hierarchy of schools consisting of three classes, the elementary, the grammar, and the rhetoric school. It is to these three schools that Apuleius refers in 'Florides' 20, "At a repast the first cup is for thirst, the second for joy, the third for pleasure, the fourth for folly. In the feasts of the Muses on the contrary the first cup is poured out for us by the literator (who teaches us to read) ; it begins to polish the rudeness of our minds; then comes the grammarian who adorns us with a variety of knowledge; finally the rhetor puts into our hands the weapon of eloquence."

The literature studied in these schools, it should be noted, was Greek, the system of instruction was

Greek, and the teachers were, at first, Greek. They were decidedly Greek schools. "But we," says Cicero, "who have all our learning from Greece, read and learn these works of theirs from our childhood; and look on this as a liberal and learned education." The national pride, however, as well as the practical sense of the Romans led them soon to develop a system of literary and rhetorical training, modeled after that of the Greeks, but based upon the study of their own somewhat meager but rapidly developing literature. Horace in a humorous apostrophe to a volume of his poems which he was about to publish says, "When overtaken by lipping old age, you will teach boys the rudiments of their learning in the streets of the suburbs." Thus side by side with the Greek there arose Latin schools, which to a remarkable degree maintained an independent existence. They differed from the Greek schools not only in language but, as we should expect, in laying great emphasis upon the practical and less upon the theoretical part of the work. Both classes of schools existed in Rome. In later times Latin culture alone flourished in the West while Greek flourished in the East. The situation in Rome was not unlike that which exists among us even to-day. We have schools which aim to impart a culture on the basis of the study of Latin, while other schools are organized in accordance with the belief that a more practical culture can be imparted with greater facility through the study of literature of the mother tongue. So we have Latin high schools and English high schools. Similarly the

Germans have their Gymnasia and their Realschulen, in the former of which the culture imparted is largely Græco-Roman, while in the latter the culture is that of the natural sciences and modern literatures.

GROWTH OF SECONDARY SCHOOLS. DIFFERENTIATION INTO
PRIVATE, MUNICIPAL, AND STATE SCHOOLS

Instruction in grammar and also in rhetoric was imparted at first by private tutors like Livius Andronicus and Ennius. Gradually the work of the grammarians and the rhetoricians became more clearly differentiated, the former being looked upon as preparatory to the latter.

With the lapse of time an increasing number of these tutors found it more advantageous to instruct a number of pupils from different families in common. Thus came into existence a class of *private secondary schools*. Nearly the whole of the second chapter of Quintilian's 'Institutes of Oratory' is devoted to the demonstration of the superiority of the latter over the former system. Suetonius' biographical sketches of the earlier grammarians show that the majority of them from being tutors became schoolmasters. Though the republican rulers of Rome manifested such indifference towards these schools as to provoke complaint from Cicero, the imperial authorities seem from the first to have been clearly cognizant of their influence in fitting the more barbarous races to lead peaceful and orderly lives and in creating a bond of sympathy among the widely different peoples of the vast and almost unwieldy

empire through everywhere revealing the same great literatures and cultivating like tastes. No sooner were the Gauls conquered than Cæsar opened a school at Autun. Agricola hastened to make permanent the incorporation of Britain into the empire by having the sons of chiefs educated in the liberal arts. Our own government is now pursuing a somewhat similar policy in the Philippines. Juvenal noted that even in the most distant regions young men were ambitious of becoming orators.

Furthermore, the increasingly mercenary character of the army and growing despotism in the state were excluding young men of the upper classes from military and political careers and restricting their activities to law and the civil service, for both of which a school training was considered an indispensable qualification.

These and like causes led to the establishment in almost all the larger cities of the empire of *municipal schools*, supported by the municipality. Referring to the thirty years he had devoted to the teaching of grammar and rhetoric in Bordeaux, Ausonius says, "I have performed my municipal duties." "Exegi municipalem operam."

The fostering care of the state for these schools of grammar and rhetoric manifested itself in a variety of ways. Julius Cæsar granted the rights of Roman citizenship to all teachers of the liberal arts. Successive emperors granted them special privileges such as, exemption from military service, from judicial functions, from having soldiers quartered in their

houses. Teachers were not compelled to accept the ruinous obligations of the curial office. So valuable were these privileges that Antoninus Pius was compelled to restrict by law the number of grammarians and rhetoricians in each city who might enjoy them.

Under Vespasian the state not only favored private and municipal teachers with special privileges, but it inaugurated the establishment of a few *state schools*, maintained from the treasury not of the municipality but of the state. Vespasian granted the rhetoricians, says Suetonius, an annual salary of 100,000 sesterces (about \$4,000). Later Marcus Aurelius endowed at Athens two chairs in each of the great schools of philosophy (Academic, Peripatetic, Stoic, and Epicurean) with a salary of 10,000 drachmas (about \$1,800). Furthermore, Severus, Alexander, Gratian, and other emperors seem to have compelled the cities, which under the ruinous taxation had become dilatory and parsimonious, to pay certain fixed salaries to their teachers.

To sum up, private schools for teaching grammar and rhetoric were widely distributed throughout the empire, municipal schools were maintained by most of the larger cities, and, in a few great centers of learning such as Athens and Rome, schools were endowed directly by the state.

THE CHARACTER OF ROMAN SECONDARY SCHOOL-WORK

The courses of the Latin and Greek schools of the Romans were sufficiently alike to be included in the same general description. In both the work con-

sisted mainly of the study of grammar involving an extensive and intensive study of literature. The extension of meaning acquired by the term 'grammar' is well explained by Quintilian. "Let grammar (which, turning into a Latin word, they have called *literatura*, 'literature') know its own boundaries, especially as it is so far advanced beyond the humility indicated by its name—for though weak at its source, yet, having gained strength from the poets and historians,—it has engrossed the study of almost all the highest departments of learning."

The work in literature was preceded by the study of grammar in our modern, narrower sense of the term. In both schools the knowledge and training thus acquired were made available for oratorical purposes through abundance of practice in writing and speaking. Some slight attention seems to have been paid to the sciences. The study of grammar was intended to cultivate correctness of speech. The study of literature, in so far as it dealt with form, would cultivate the student's sense of the beauties of literary style; in so far as it dealt with content, it would develop that breadth of knowledge and of sentiment which is the necessary foundation of true elevation of thought and language. The rhetorical exercises trained the pupil's powers of expression.

School instruction in these subjects became elaborately systematized at the hands successively of the Athenians, the Alexandrians, and of the Romans themselves. So formal and elaborate was the procedure that it is impossible to examine it here in all

its details. A few only of the most typical will be described.

GRAMMAR

The work in grammar, using the word again in the restricted sense, began with the letters. They were divided into vowels and consonants, and the latter again into semi-vowels and mutes. A comparison of the letters with the elementary sounds of the language then led up to the study of changes in the form of words. Did letters exist corresponding to all the sounds of the language? For instance, was the second vowel sound of 'optimus' correctly represented by 'i'? What letters had more than one sound? Instances of vowel changes in words were noted, in conjugation, as 'fallo, fefelli'; in composition, as 'cadit, excidit,' etc. Attention was paid to the changes taking place with the lapse of time. 'Alexander' was compared with the form 'Alexanter' found on ancient monuments. Similarly, 'arbor, labor, vapor,' were contrasted with the obsolete forms 'arbos, labos, vapos.' Words were classified as to their function, some following Aristotle's classification into verbs, nouns, and conjunctions. Varro, an eminent Latin grammarian, divided them into those that have case, those that have tense, those that have neither, and those that have both. It was noted that some nouns feminine in form were masculine as 'Muræna,' some neuter in form were feminine, also that some verbs looked like nouns as 'fraudator,' that some were used only in the third person as 'licet, piget.' A large but poorly classified collection of facts like these was made.

LITERATURE

The study of grammar was followed by that of literature, the interpretation of the poets. The method was carefully elaborated and, notwithstanding a great variety of terminology, seems to have been in different schools essentially the same. It may be advantageously discussed under the following heads,—the reading, the comment, the correction, and the judgment.

Great importance was attached to *Reading aloud*. A Roman epitaph reads, "I have been grammarian and reader, but of those readers who please through the purity of their delivery." Careful attention was paid to accent, quantity, pronunciation, and also expression. Many passages were memorized.

The purpose of *the Comment* was to furnish the student with apperceiving ideas and thus aid him to a more thorough appreciation of the poem. The life of the author, the circumstances of the composition of the poem, facts about persons, places, and things mentioned in the text were among the points discussed. Quintilian probably has in mind the extensive knowledge which this part of the work demands of the teacher when he writes, "Nor is it sufficient to have read the poets only; every class of writers must be studied, not simply for matter, but for words, which often receive their authority from writers." Juvenal says that it was expected of the teacher that he should "read all histories, know all authors as well as his finger ends, that if questioned . . . he should

be able to tell the name of Anchises' nurse, and the name and native land of the stepmother of Anchemolus . . . also how many flagons of wine the Sicilian king gave to the Phrygians."

The Correction dealt with the text and also with the style of the author. First there was the authenticity of the text. Is this the work as it was composed by the author? The authentic readings of the Greek writers had been quite carefully worked out by the Alexandrian scholars. Yet much trouble was caused in this age of manuscripts by careless copyists. Gellius tells of a scholar who, at great expense of time and money, hired a copy of Ennius, said to have been corrected by Lampadio, in order to assure himself whether the poet had written 'equus' or 'eques.' Is 'stetisses' or 'stitisses' the correct reading in Cato? Did Vergil write "Scopulo *infixit* acuto" or 'infixit'? But this correction did not confine itself to questions of authenticity. It boldly questioned the style of the poet himself. Quintilian suggests that the teacher should point out "what words are barbarous or misapplied, or used contrary to the rules of the language." For example, 'vexasse' was thought too weak a term in Vergil's line "Dulichias vexasse rates et gurgite in alto." 'Squalentem' does not harmonize in sense with the other words in "Per tunicam squalentem auro latius haurit apertum." Even Cicero should have used 'potestate' in the phrase "in prædonum fuisse potestatem sciatis." In the study of most poems such questions as the following would come up: "Are these figures of speech legiti-

mate? Are they well placed? Are they not too numerous?" Lively and even passionate controversies sometimes arose over these criticisms.

The study of an author was rounded out with *the Judgment*, that is, the general estimate of an author. In this were involved a characterization of his style, a *résumé* of his chief merits and defects. Quintilian thought it the duty rather of the rhetor than of the grammaticus "to point out the beauties of authors, and, if occasion ever present itself, their faults."

Book 10 of Quintilian's 'Institutes' is devoted largely to appreciations of this sort. For instance, "Simonides, though in other respects of no very high genius, may be commended for a propriety of language and a pleasing kind of sweetness; but his chief excellence is in exciting pity, so that some prefer him in that particular to all other writers of the kind."

RHETORICAL EXERCISES

As has already been indicated, the ideal to which the secondary and higher schools of the practical Romans directed the efforts of their students was that of the finished orator, for it is pre-eminently the orator who utilizes in practical life the learning and the culture of the schools. "The man," writes Quintilian, "who can duly sustain his character as a citizen, who is qualified for the management of public and private affairs, and who can govern communities by his counsels, settle them by means of laws and improve them by judicial enactments, can certainly be nothing else but an orator." Hence the school-work

of the Romans culminated in the rhetorical exercises in which the student was led to utilize the literary and grammatical training he had received in the development of oratorical skill. There were two courses, an elementary and an advanced. Suetonius states that some of the earliest grammatici gave to their students the whole of their rhetorical training.

The elementary course given in the grammar school consisted first, of the narration by the pupils of short, simple stories, usually fables. This was followed by the paraphrasing of passages from the poets, sometimes close, sometimes free. "He who shall successfully perform this exercise," says Quintilian, "will be able to learn anything." "Let sentences, also," he continues, "and *chriæ*, and *ethologies* be written by the learner, with the occasions of the sayings added according to the grammarians, because these depend upon reading. The nature of all these is similar, but their form different; because a sentence is a general proposition; *ethology* is confined to certain persons. Of *chriæ* several sorts are specified: one similar to a sentence, which is introduced with a simple statement, 'He said,' or 'He was accustomed to say'; another which includes its subject in an answer: 'He, being asked,' or 'When this remark was made to him, replied'; a third, not unlike the second, commences 'When some one had' not 'said' but 'done, something.'" An exercise commonly connected with this was that of reconstructing the sentences so that the name of the person concerning whom the anecdote was told would occur in the different cases.

The advanced preparatory course seems to have been given by the grammatici, although Quintilian contends that it should be given by the rhetor. It included a greater variety of exercises. The list given by Hermogenes is as follows: 1. *Fables*; freer renditions of these were expected than in the elementary courses. 2. *Stories*, differing from the preceding in being more probable, the characters being gods or men. 3. *Chriæ*, formal discussions of a thought attributed to some eminent man. 4. *Refutation or Confirmation* of a tale. 5. *Commonplaces*, invective against vices or praise of virtues. 6. *Praise and Censure*. This exercise differed from the preceding only in referring to particular individuals. 7. *Comparison* (a) of men, as Achilles and Hector, or (b) of virtues, as justice and generosity. 8. *Theses* or general questions as, Should a man marry? Is country life to be preferred to city life? Not only were the subjects of the rhetorical exercises divided in this way into a number of conventional classes, but each class of subjects had to be treated according to a definite, formal plan. In writing a *chria*, for example, the pupil was required to begin with a eulogy of the author, then he had to give a paraphrase of the thought, then an exposition of it, fourthly, an investigation of the contrary, followed in order by comparison, illustration, confirmation, the whole to conclude with an exhortation.

Other Subjects.—‘Grammar’ occupied so large a space in the secondary school curriculum as to leave little room for anything else. The attention paid to

the fine arts and the sciences was not on account of their culture value, but because of their utility. *Music* and *dancing* were prized only in so far as they gave ease and grace of manner to the orator.

The former of these arts improved his voice. Instruction was given by special teachers and usually in the privacy of the home, for the practice of these arts elsewhere than in the time-honored religious ceremonies was not considered to comport with the dignity of a Roman citizen. Sculpture, as involving manual labor, was despised, and the art of painting was little cultivated.

The *sciences* were held in somewhat higher esteem, presumably because of their greater practical utility. Those studied in the secondary school course were for the most part included under the term 'geometry.' "Geometry," writes Quintilian, "is divided between numbers and figures." A little farther on, he continues, "Need I add that geometry raises itself still higher, so as even to ascertain the system of the world? When it demonstrates by calculations the regular and appointed movements of the celestial bodies, we learn that, in that system, there is nothing unordained or fortuitous." Under geometry, then, were included the sciences distinguished by us as arithmetic, geometry, geography, and astronomy. The word 'geometry' retained, it will be noted, much of this breadth of meaning throughout the Middle Ages. The Romans, characteristically enough, limited the study of these subjects to their practical applications in everyday life. Cicero, in speaking of

geometry, says, "We have reduced the limits of this science and we expect of it no other benefit than that of knowing how to measure or count." These subjects were studied only in brief periods which could be spared during the school day from the all-important literary and rhetorical studies. Instruction was given by a special teacher, the 'geometer.' The rarity of mention of this teacher in Roman literature indicates that his position was a subordinate one. The arithmetic was a continuation of the work of the 'calculator.' The geometry (in the narrower sense) consisted chiefly in exercises in mensuration.

The reason for this is given by Quintilian, "Knowledge of linear figures, too, is frequently required in causes, for law-suits occur concerning boundaries and measures." Even less attention was paid to the study of astronomy. Its chief practical application seems to have been in the construction of the calendar.

Bearing in mind that rhetoric involved dialectic or the science of reasoned argument and that the term, geometry, had a much wider meaning than at present, it is evident that the Roman course of study included all the material later differentiated by Martianus Capella and others into the 'Seven Liberal Arts,' still later known as the trivium and the quadrivium.

Methods and Discipline.—Owing to the scarcity and expensiveness of books much of the instruction was dictated. 'Dictata' was the name by which schoolbooks were commonly known. Much emphasis was laid upon learning by heart. Objective means of instruction were not unknown. The schoolroom was

often adorned with the busts of the authors read. Juvenal speaks of these being blackened by the smoke of the lamps of pupils arriving early in the morning. The walls were decorated also with pictures graven on stone representing great events of history or mythology. The *Tabula Iliaca* in the Capitoline Museum at Rome is an example.

Monthly public exhibitions, prizes, and corporal punishment were employed as means of stimulating activity and maintaining discipline.

THE ROMAN SCHOOLS OF RHETORIC

The emphasis laid upon oratorical training in the Roman grammar schools, and the reasons for it have already been discussed (p. 58). Every schoolboy, says Juvenal, is ambitious of rivaling some day Tully or Demosthenes. Yet only a small proportion of the students of the grammar school were to become orators. Its function was to afford a liberal education, such as the social life of the upper and middle classes demanded. The training of the school was oratorical because the orator had become the Roman ideal of the well-educated man.

Those who entered fields of activity such as law or politics, which necessitated the actual practice of oratory, entered a school of rhetoric, where they received a more specific training. Interest in the subject increased until, in the first centuries of the Christian era, it overshadowed all others. The establishment of the empire and the seizure of absolute power by the emperors deprived the art of any real value in the

field of politics, yet this did not affect the popularity of the subject among the upper classes. From being pursued as a practical training for a profession, it came more and more to be cultivated as a fine art.

The work of the schools of rhetoric consisted very largely of exercises in declamation and debate.

Procedure had become somewhat conventionalized and elaborate, resembling in this respect that of the grammar schools which we have described. In fact, the methods of the latter were derived largely from the former. Suetonius explains this. "The early grammarians taught rhetoric also . . . whence it arose, I think, that in later times, although the two professions had then become distinct, the old custom was retained, or the grammarians introduced into their teaching some of the elements required for public speaking, such as the problem, the periphrasis, the choice of words, description of character, and so on." The narrow range and the conventionality of the topics are satirized by Juvenal. "Do you teach declamation? Oh, what a heart of steel must Vectius have, when his numerous class kills cruel tyrants! For all that my boy has just conned over at his seat, he will stand up and spout—the same stale theme in the same sing-song. It is the reproduction of the cabbage that wears out the master's life."

The character of the rhetorical study among the Romans of the second century A.D. and the importance which they attached to it are reflected in the following incident related by Aulus Gellius:

"During the summer holidays, being desirous to

retire from the heat of the city, I accompanied Antonius Julianus, the rhetorician, to Naples. There happened to be a young man of fortune, studying and exercising himself with his preceptors in order to plead causes at Rome and accomplish himself in Latin eloquence; this person entreated Julianus to hear him declaim. Julianus accordingly went to hear him and I attended him. The young man appeared; and, beginning an exordium with rather more arrogance and presumption than became his years, he demanded the subject of controversy to be proposed. There was with us a follower of Julianus, an ingenious and accomplished young man, who took offense that he should, in the presence of Julianus, dare to risk his reputation by the extreme peril of inconsiderate speaking. By way of trial, therefore, he proposed a controversy not very consistent which the Greeks call 'Aporos'; but which in Latin may not very improperly be called 'Inexplicable.' (The question was: 'Seven judges try a prisoner, the majority to decide. Three decide for death, two for banishment, and two for a fine.') The young man as soon as he heard this without at all considering the matter, or waiting to know what was to be proposed, began with wonderful rapidity to assert I know not what principles upon this question, and to pour out expressions distorted from their meaning and a noisy torrent of high-sounding words. All his companions who were accustomed to hear him applauded with noisy clamor. Julianus all this while was in the greatest perplexity, blushing with confusion. After he had gabbled out many

thousands of sentences, we took our leave. His friends and acquaintances, following Julianus, desired to know his opinion. 'Do not,' he replied, 'inquire my opinion: *without controversy* this young man is eloquent.' "

The institution by Vespasian of the custom of paying the salary of certain eminent professors of rhetoric from the public treasury inaugurated a movement similar to that carried out in Athens by which the schools of rhetoric were organized into a state institution of higher learning.

As the increasing artificiality and emptiness of the work of the rhetorical schools rendered them less and less adequate to the demands of practical life their functions as professional schools were in part usurped by professional law schools, the greatest of which were established at Rome and at Berytos.

The Romans desirous of a highly finished education rounded out their school careers with a year or two of study at the famous Greek schools at Athens, Rhodes, or elsewhere.

QUINTILIAN

Among the Roman writers on education, Quintilian, a great teacher of rhetoric of the first century, stands pre-eminent. In the introductory chapters of his 'Institutes of Oratory' he sets forth with some detail his views on elementary education. School instruction, he insists, should be made as agreeable as possible; the energies of the pupils are to be aroused through mutual emulation. Reading and writing are

to be taught together and care is to be taken that the child shall hear only correct speech. The teacher is to study the disposition and abilities of his pupils. . . . The remainder of the first book is devoted to the discussion of the teaching of grammar, reading, elementary rhetorical exercises, and other subjects preliminary to the study of rhetoric proper. The second book considers the first elements of instruction under the hands of a professor of rhetoric, the five following discuss invention and arrangement, the five remaining books are devoted to elocution and to a discussion of the character of the ideal orator.

Though Quintilian's efforts proved unavailing against the decadent tendencies of popular literary taste, his was a name of great authority among the rhetors and grammarians of succeeding centuries. During the early Renaissance the recently discovered works of Quintilian exercised a marked influence upon the educational thinking of the time.

STATUS OF THE TEACHER AMONG THE ROMANS

The elementary teachers were frequently slaves or freedmen. As a class they did not hold a high place in public esteem. As among the Greeks (p. 7), the same individual often performed the functions of scribe and of elementary teacher. The epitaph of a literator at Capua informs us that he was honest and upright in drawing up wills. "*Idemque testamenta scripsit cum fide.*"

Professional training was obtained only through the apprentice system. The apprentice, known as

sub-doctor or *proscholus*, led a life of proverbial hardship and poverty. Full membership in the profession was attained through the recommendation of the master, who at first had the right of nominating his successor. Under Marcus Aurelius appointment was made only after the candidate had passed a strict examination before a board of eminent men. Part of the examination consisted in the delivery of a specimen lecture.

Under the republic and the early empire the social rank of even the secondary teachers was inferior. Their condition improved during the four or five centuries preceding the downfall of the empire. Never, perhaps, has the teaching profession stood so high in the social scale as in certain Roman provinces, Gaul, Africa, and the East, during the fourth and fifth centuries A.D.

RÉSUMÉ ON ROMAN SCHOOLS

For centuries after the Greeks had developed a system of liberal education, non-professional school-work among the Romans was limited to instruction in reading, writing, and calculation.

The higher culture of the later Romans was chiefly literary in character and was adopted from the Greeks.

Among the special causes leading to this were:
 1. The introduction to the Romans of Greek literature through representations or translations of Greek plays and through the translation of the *Odyssey*. 2. The study by the Romans of Greek as the interna-

tional language of the time. 3. Growth of interest in the study of oratory, a system of training in which had been developed by the Greeks.

Though Greek culture was adopted by the Romans, it was strongly modified to adapt it to Roman ideals. Only those features were appropriated which they could utilize in the attainment of the practical ends of life.

Among the Romans, as among the Greeks, interest centered more and more in the study of rhetoric. With the loss of political freedom it was studied in part as professional preparation for the practice of law and in part as a fine art, as an end in itself.

Methods of school procedure among the Romans had become highly elaborated and conventionalized. The course of study was almost exclusively literary and rhetorical.

CHAPTER IV

THE TRANSITION PERIOD

WHILE Rome was, century after century, slowly sinking into ruin, the Christian Church, which found in the social and political conditions of the declining empire a soil favorable to vigorous growth, was developing within itself institutions which were to perpetuate the traditions of Roman culture.

THE CATECHETICAL AND THE CATHEDRAL SCHOOLS

The necessity of instructing enquirers and converts, as well as the young, in Christianity, this new and strange system of religious doctrine, gave rise to the catechetical schools, the largest of which became professional theological schools, in charge frequently of special teachers known as catechists. When later the work of these schools tended toward a cold intellectuality inimical to religious growth, they were gradually abolished and instruction was afforded by any member of the cathedral clergy who felt himself capable, from the bishop downwards. Modifications of this system in the direction of greater economy and efficiency resulted in the evolution of the cathedral school. The introduction among the cathedral clergy of the monastic rule by Chrodegang of Metz in the eighth century seems to have contributed much to-

ward making the cathedral schools centers of the intellectual life of the time. The plan was rapidly and widely adopted elsewhere. In time the systematic instruction of the candidate for orders came to be the peculiar function of a member of the cathedral chapter, who was entitled the Scholasticus or Magister Scholarum. So frequently was this office united with that of Chancellor that the titles Scholasticus and Chancellor became practically synonymous.

THE EARLIEST MONASTIC SCHOOLS

Neither asceticism nor monasticism is a tendency peculiar to any religion. Both have manifested themselves in Buddhism, and in Judaism as well as in Christianity. In the fourth century conditions were unusually favorable to the spread of these practices. The teachings of Christianity had made the future world seem very real and vivid. The age of martyrdom was past, but Christians still retained a lively sense of the merit to be acquired by suffering. The thinking of the time dwelt upon the antagonism existing between the material and the spiritual. The teaching of the Scriptures strongly supported these views. The brilliant civilizations of Greece and of Rome had enabled men to test to the utmost the capacity of sensual and esthetic pleasures to afford enduring happiness, and they had been found wanting. Decadent political and social conditions seem to have been depriving life of much of its security and attractiveness. The movement began with individuals who sought isolation in the Egyptian desert. The num-

ber rapidly increased. The first monastic community was established by Pachomius in the fourth century at Tabennæ, an island in the Nile. Athanasius introduced the fashion into Western Europe.

At first each monastery was a law unto itself. In some of them ability to read was a condition of admission. Some of the early monks devoted their time largely to religious meditation and to the study of the Scriptures. Candidates for the priesthood often resorted to them for instruction. In 360 St. Martin established a monastery near Poitiers, and a few years later another near Tours. During the following century many others were established in Southern Gaul. In the system of monastic discipline planned by John Cassian for the monastery of St. Victor at Marseilles in the early part of the fifth century, provision was made for the education of those who were taking up the life of a monk or a priest. The course of instruction here, however, was narrowly religious and carefully excluded as much as possible of heathen Græco-Roman culture. The cultural influence of the monastic schools dates from the reforms of Benedict and Cassiodorus.

For two or three centuries or more these professional religious schools existed side by side with the Roman schools of grammar and of rhetoric.

GRAECO-ROMAN CULTURE IN THE LAST DAYS OF THE ROMAN EMPIRE

The excessive importance which the cultivated Romans of the second and third centuries A.D. at-

tached to proficiency in the rhetorical arts became still more exaggerated as the Empire approached its end. As so frequently happens in the history of school curricula, a subject, in this case, oratory, from being studied as a means became an end in itself. Mere skill in the use of words, irrespective of their relation to the practical ends of life, was raised to the rank of a fine art. What Boissier writes of the general interest of the people of the East in the art of the rhetoricians applies no less fully to the citizens of the Western Empire during the two or three centuries preceding its fall. Whenever public performances by famous rhetoricians were announced, "A crowd composed of the people of all nations hastened to the place where they were to speak, and even the foreigners *who could not understand them* listened to them with delight as to melodious nightingales, admiring the rapidity of their speech and the harmony of their beautiful phrases." Of the professional orator in Western Europe, Dill says, "If he was a man of reputation in his art, people rushed to hear him declaim, as they will do in our times to hear a great singer or actor or popular preacher.—This power of using words for mere pleasurable effect, on the most trivial or the most extravagantly absurd themes, was for many ages, in both west and east, esteemed the highest proof of talent and cultivation."

The chief centers for the cultivation of this art were no longer in Italy but in Gaul, and to a less extent in Northern Africa. In Gaul lived Ausonius, successively grammaticus and rhetor at Bordeaux and

later one of the great dignitaries of the empire, whose sketches, in his 'Professores Burdigalensis,' of Minervius, who "wore the rhetor's toga with the dignity of a Quintilian," and who "prepared a thousand youths for the forum and twice one thousand for senatorial honors," and of Attius Patera, a "teacher of mighty rhetors," as well as of his other fellow-teachers, reveal to us something of the ideals and activities of the school-work of the period.

The widespread interest in learning in Carthaginian Africa is attested not only in numerous inscriptions but by the large number of eminent writers and scholars from that region. Not only Martianus Capella, the author of the cyclopedic text so widely used in medieval schools, but the poet Apuleius and St. Augustine, the works of both of whom shed light upon the school-work of the time, were Africans. It is significant that many of the Church Fathers, such as Tertullian, Cyprian, Arnobius, and Lactantius, were natives of these African provinces and that the majority of them had been professional teachers or practitioners of the art of rhetoric.

DECLINE OF ROMAN CIVILIZATION AND CULTURE

In the fifth century the period of brilliant though formal Gallo-Roman culture was drawing to a close. In the writings of Apollinaris Sidonius, a Christian bishop, yet, characteristically of the times, an ardent student of the lore of the pagan schools, we observe signs of the approaching period of barbarian dominance and political confusion which was to deprive

this ancient culture and its schools of the very foundations of their existence. "How can I write six-feet hexameters," says Sidonius significantly in one of his letters, "when surrounded by seven-feet barbarians?" Within a century after his death, Gregory of Tours writes, "The cultivation of letters is disappearing . . . in the cities of Gaul, while . . . the ferocity of the barbarians and the passion of kings rage alike unchecked, so that not a single grammarian skilled in narration can be found to describe the general course of events whether in prose or in verse."

CHAPTER V

THE SCHOOLS OF THE MIDDLE AGES

THE UNFAVORABLE CULTURE CONDITIONS

THE political and social conditions in Western Europe after the downfall of the Roman empire were highly unfavorable to intellectual culture and to the school-work which fostered and disseminated it. As states fell, with them fell also all guarantee of the security of life and property, and men were too intent upon the very maintenance of existence itself to be able to devote time or effort to the pursuit of culture. The dominant barbarians had naturally no appreciation of, or regard for, the literary and scholastic interests that were the final product of over a thousand years of Greek and Roman civilization. The schools of grammar and rhetoric ceased to exist in Gaul in the sixth century. Society relapsed into a condition of barbarism.

HOW CULTURE SURVIVED

That across this period of barbarism and confusion the essentials of Græco-Roman culture have been preserved, and with them the traditions of the Græco-Roman schools, is due largely to the Christian Church, for in the general ruin of the appurtenances

of Roman civilization the Church was one great institution to survive. Not only did it survive, but it inherited much of the power and prestige of the empire. The excesses into which the barbarians were plunged on finding themselves masters of the wealth and luxury of the effete Roman provincials were checked in Gaul, as elsewhere, on the one hand by the powerful appeals which the Christian Church made to their fear of the supernatural, and on the other by the examples of austere living afforded them by the monks, especially the missionary monks from Ireland. Hence, just as Greece had taken captive her rude Roman conqueror, so Christianity, particularly as preached and practised by the monks, took captive the pagan Teutonic masters of Rome.

It is an important fact in the history of the non-professional school that the Christian Church, notwithstanding its tendency toward other-worldliness and asceticism, was yet unable to dispense with Roman culture. Even so ardent an enemy of paganism as Tertullian acknowledged this. The position of the clergy as the religious leaders of the people necessitated on their part a knowledge of the doctrines of Christianity as contained in the Scriptures, the writings of the Fathers, and the decrees of the Church. And an intelligent knowledge of these was impossible without some acquaintance with the elements of that culture amidst which they had developed and with which they were permeated. The mere performance of the routine duties of the priestly office necessitated ability to read, some knowl-

edge of music, and at least such knowledge of arithmetic and astronomy as would enable them to determine the date of the various holy days. Furthermore, it should be noted that Latin, the language of the Church, was for almost all a difficult foreign tongue, to be mastered only through arduous and protracted labor. On the other hand, once mastered, the way lay open to the accumulated stores of ancient classical culture. Cassiodorus, in the following passage, states clearly not only the need of the clergy for the traditional secular learning of the Romans, but their attitude toward it. "Nor did the holy fathers decree that the study of secular letters was to be rejected, since our minds must be instructed to the understanding of the sacred Scriptures. . . . Many again of our fathers versed in literature of this sort, and penetrating into the law of God, arrived at true wisdom. So the blessed Augustine notes in the book on Christian doctrine: 'We do not take into consideration with how much gold and silver and raiment Cyprian, the amiable teacher and the blessed martyr, was adorned when he came up out of Egypt; ¹ with how much were Lactantius, Victorinus, Optatus, Hilarius' (we add Ambrose and Augustine himself and Jerome and many other Greek scholars, too numerous to mention)." (*Multosque alios innumerabiles Græcos.*)

While the storms of invasion and war brought Roman civilization in the center of the empire to the verge of annihilation, the ancient classical learning

¹ That is, how much pagan learning he had acquired.

was still cultivated in the extreme eastern and western parts, which remained relatively undisturbed. From the East something of this learning was brought back during the early medieval period by individual scholars such as Theodore of Tarsus, later through the spread of the Mohammedan conquests and through the movements inaugurated by the Crusades. But learning and Christian enthusiasm were first brought back to Gaul and Central Europe from Ireland, their refuge in the far West. It was probably at Tours, and while Gaul was still the chief home of Roman culture, that St. Patrick acquired that knowledge of Christian doctrine and of classical learning which he bore to Ireland. In this island, sheltered from the turmoil that accompanied the first period of barbarian rule in Britain and on the continent, Christian and classical learning flourished vigorously, while elsewhere in Western Europe civilization went rapidly backward. From this western refuge eager missionaries carried back to England and the continent, in the sixth and seventh centuries, a contagious enthusiasm for learning and Christianity. In 563, Columba, an eminent Iro-Scottish (for Ireland was at this time the home of the Scots) religious leader, established the monastery of Iona among the Picts of what is now called Scotland. Some sixty or seventy years afterwards, Aidan, a member of this monastery, was sent as missionary to the English of Northumbria, among whom he founded the cathedral monastery of Lindisfarne. Irish monks seem to have penetrated here and there into other parts of England.

Aldhelm received his earliest instruction from an Irish scholar, Maïdulf, who established himself in the wilds of Wiltshire.

REFORMS IN MONASTIC LIFE FAVORABLE TO LEARNING

Meanwhile monastic life had been undergoing reforms which made it a more efficient factor in the transmission of culture. The extreme asceticism and the want of reasonable regulation in the life of the earliest monasteries had hampered their efficiency and had proven particularly unsuited to the manners and customs of the West. St. Benedict, in establishing his monastery at Monte Cassino, drew up a rule so practical and effective that it was rapidly and widely adopted, and infused monastic life everywhere with renewed vigor and usefulness. His 'Rule' divided the waking hours between manual labor, reading, and worship. Chapter 38 appoints reading during meals. Chapter 42 appoints the public reading of some edifying book daily before evensong. In Chapter 48 it is enjoined that three hours in the morning and three in the afternoon be devoted to manual labor and two hours to reading. Chapter 59 states that children may be given to the monastery. The requirement of daily reading and the reception of children necessitated systematic instruction and prepared the way for the development of monastic schools.

An even greater impetus was given to the educational influence of monastic life by Cassiodorus, a Roman of noble family, who, after a long and successful career as minister of state under Theodoric

and his successors, retired about 539 to the monastery which he had erected upon his estate at Viviers, in Calabria. One of the last to receive a lay education of the Roman type, he had been for some time intensely interested in raising the standard of Christian theological education. Upon retiring, at the age of seventy, to his monastery, he incited his monks to study, and employed them in transcribing not only the writings of the Church Fathers, but those of the classical Latin and Greek authors. It is largely because of the activity thus inaugurated that the monasteries have been enabled to preserve to us so much of the classical literature. Cassiodorus, himself, led the way, transcribing with his own hand the Psalter, the Prophets, and the Epistles. Perhaps the most important of his contributions to the cause of education consists in the fact that he made the monasteries the bearers to the future of that pagan learning which Cassian so abhorred. One of the indications of the arrested growth and the incipient decline of learning from about the third century on was the tendency to make digests of the content of the school curriculum. One of these by Martianus Capella, a pagan scholar of Northwestern Africa, epitomized learning under seven heads. Now Cassiodorus, in order to encourage learning among his monks, composed for their use not only a treatise on the Scriptures but a compendium of secular learning. He notes the mystic significance of the fact that it consists of seven subjects, three preparatory subjects of a literary character, grammar, rhetoric, and dialectic, afterwards

called the trivium, and four more advanced subjects of a scientific character, arithmetic, geometry, music, and astronomy, which make up the quadrivium. The trivium and quadrivium were almost universally accepted throughout the Middle Ages as the standard course preparatory (we must not forget that the schools of this period were primarily professional religious schools) to the study of theology.

CONTINUITY OF ROMAN SCHOOL TRADITION THROUGH THE MIDDLE AGES

Though Græco-Roman culture exerted an influence upon medieval school-work through many other channels, this fact of the persistence of the 'seven liberal arts' as the standard course of study, enables us to trace a continuity in school curricula from the Roman period through the 'Dark Ages' to the Renaissance, when the interest in the literary studies of the early schools of Athens and Rome revived. Thus we may say that "The old pagan learning was never destroyed, notwithstanding the complete victory of Christianity." Much of the credit for this may be ascribed to Cassiodorus.

IMPORTANT MEDIEVAL TEXTS AND TEXT-BOOK WRITERS

Boëthius, a friend and contemporary of Cassiodorus, and like him a Roman of noble family, who held high office under Theodoric, perhaps did more to influence the form and content of medieval school learning than any other individual. His translations and commentaries were practically the only means of

access to Aristotle before the advent of Mohammedan learning. The texts which he compiled and composed on arithmetic and geometry were for many centuries the standard treatises on those subjects. His treatise on music was used as a text in Oxford and Cambridge down to comparatively recent times. Isidore, a Spanish bishop of the seventh century, wrote a cyclopedia of the learning of his time entitled 'Etymologiarum Libri XX,' which was widely used in the schools. The lack of originality and of ability to distinguish between truth and absurdity which this work manifests, is an indication of the ignorance of the times. The extensively used cyclopedic works of Martianus Capella and Cassiodorus have just been mentioned.

ESTABLISHMENT OF MONASTIC CENTERS OF LEARNING

The work of the Irish monks in the North of England was powerfully supplemented by that of Roman missionaries in the South. The Cathedral school at Canterbury, established probably by Augustine near the beginning of the seventh century, became a great center of learning on the advent, as Archbishop of Canterbury, of Theodore, a learned Greek of Tarsus, in 668. Of the work of Theodore, and his able and learned coadjutor, the African monk Hadrian, Bæda writes: "Forasmuch as both of these were well read both in sacred and secular literature, they gathered a crowd of disciples, and there flowed from them rivers of knowledge to water the hearts of their hearers; and together with the

books of the Holy Writ, they also taught them the arts of ecclesiastical poetry, astronomy, and arithmetic. A testimony of which is, that there are still living at this day some of their scholars who are as well versed in the Greek and Latin tongues as in their own. Nor were there ever happier times since the English came into Britain." To Canterbury came from the Irish school at Lindisfarne, Wilfrid, who is probably the founder of the famous cathedral school at York. Here studied also Aldhelm, the founder of the monastery at Malmesbury. Another pupil, Benedict Biscop, an Anglian noble, founded at Wearmouth and Yarrow the twin monasteries in which lived and taught Bæda, perhaps the most eminent scholar of his day. From these and other English schools went forth missionary scholars who, together with the Irish monks, bore back to the continent the classical learning and the religious enthusiasm which had there become almost extinct. Possibly the greatest of these was Boniface, who, in the eighth century, founded several monasteries, all under the Benedictine rule. Of these, Fritzlar, Fulda, and Bischofsheim became the seats of famous schools. Columban, an Irish scholar (not to be confused with Columba, the founder of Iona), established the monasteries of Luxeuil and Fontain in Burgundy and of Bobbio in Italy. One of his disciples, Gallus, founded near Lake Constance the monastery afterwards named St. Gall, which became, perhaps, the most famous of all in the history of medieval learning and literature.

It was, perhaps, under the influence of the educational reforms inaugurated by the Anglo-Saxon monks that Chrodegang, of Metz, increased the educational efficiency of his cathedral clergy by placing them under the monastic rule. (See page 70.)

REVIVAL OF LEARNING UNDER CHARLEMAGNE

The first revival of learning on the continent was due, however, to the genius and energy of Charles the Great. With the end in view, no doubt, of creating a spirit of national unity in his heterogeneous empire through the dissemination of religion and of culture, he made vigorous efforts to raise the standard of learning among the aristocracy, and particularly among the clergy. The Benedictine rule was introduced into all monasteries that had not already adopted it. The example of Chrodegang, of Metz, was everywhere followed in the monastic organization of the cathedral clergy. Eminent scholars were attracted to the imperial court. The 'Schola Palatina,' indispensable even under the Merovingians, as a means of training secretaries and court officials in Latin, now assumed the dignity of a center of learning. Charles, himself, set the example, studying grammar under Peter, of Pisa, and rhetoric, dialectic, and particularly astronomy, under Alcuin, who had been induced to give up his chair at the great school at York, and had been placed at the head of the palace school. Important offices in church and state were used as rewards to those most proficient in learning. Imperial letters were issued

exhorting the clergy to greater diligence in acquiring and imparting knowledge. The following is an extract:—"During past years we have often received letters from the different monasteries, expressed in uncouth language. Hence there has arisen in our minds the fear lest, if the skill to write were thus lacking, so too would the power of rightly comprehending the sacred Scriptures be far less than was fitting:—and we all know that though verbal errors be dangerous, errors of the understanding are yet more so. We exhort you, therefore, not only not to neglect the study of letters, but to apply yourselves thereto with perseverance and with that humility which is well pleasing to God; so that you may be able to penetrate with greater ease and certainty the mysteries of the Holy Scriptures. Let there, therefore, be chosen for this work men who are both able and willing to learn, and also desirous of instructing others; and let them apply themselves to the work with a zeal equaling the earnestness with which we recommend it to them."

Although the impulse which Charles thus gave to learning died away amidst the wars and political confusion which followed his death, his efforts did not come to naught. A succession of eminent teachers and scholars can be traced from Alcuin through his pupil, Hrabanus Maurus, under whom the monastic school of Fulda became famous, through Servatus Lupus (805-862), Eric of Auxerre (834-881), Remy of Auxerre, who taught at Paris at the close of the ninth century, and Odo of Cluny (880-942),

to the time when conditions once more became favorable to the development and the spread of learning.

REVIVAL OF LEARNING IN ENGLAND UNDER ALFRED

At the same time that school-work was being vigorously promoted by Charles the Great, the ravages of the Danes, which were to bring civilization in England to the verge of extinction, had already begun. When, in 880, peace was restored through the genius of Alfred the Great, one of his first cares was to raise the clergy and the people from the barbarism and ignorance into which they had relapsed. Inspired and guided by the example of the great Charles, he issued letters to the clergy urging them to greater zeal in study and in teaching. Not only was he himself an ardent student of the literature and science of his time, but he set about translating into the language of the people the books he considered most necessary for them. Like Charles, he surrounded himself with learned men and established a school for young nobles at his court. This institution, though it does not seem to have maintained its existence, is important in the history of English education because, first, it may be considered as marking the beginning of a state educational policy, and, secondly, it was probably the first school established in England primarily for the education of the laity.

The restoration of the monastic schools, almost wholly destroyed in the Danish invasions, began with the foundation of Glastonbury, by Dunstan.

INFLUENCE OF THE NORMAN CONQUEST ON SCHOOL-WORK
IN ENGLAND

The Norman Conquest, occurring as it did at a time when all schools appertained to a great international institution, the Roman Catholic Church, brought about no great change in curriculum or methods. It did, however, have the important result of changing the language of the school from English to French, and this custom survived until the fourteenth century. In Trevisa's translation of Higden's 'Polychronicon' (written early in the fourteenth century) we read: "Children in scole . . . beeth compelled for to leve hire own langage, and for to construe hir lessouns and hire thynges in Frensche, and so they haveth seth the Normans come first into Engeland." To this passage the translator appends the following note: "This manere was moche i—used to for the firste deth, and is siththe sumdel i—changed for Sir John Cornwaile, a maister of grammer chaunged the lore in gramer scole and construcion of Frensche in to Engliche: and Richard Pencriche lerned the manere techynge of hym and of othere men of Pencrich: so that now [1385] . . . in alle the gramere scoles of Engeland, children leveth Frensche and construeth and lerneth an Engliche." Until 1362 French was the language of the English courts. Certain French phrases are still retained.

THE AIM OF MEDIEVAL SCHOOL-WORK

The general non-professional school, the history of which is outlined in these pages, seems to have

had an independent existence during the early Middle Ages only in Italy, where the Roman secular schools of grammar and the liberal arts do not seem to have altogether died out. Throughout the rest of Western Europe there were only the church and monastic schools, the aims of which were far different from those of lay schools of the liberal arts. In the first place they were established to give, not a liberal education that would fit for membership in cultured society, but to give that theological, professional instruction and training needed by the monks and the secular clergy. The educational function of the church schools was primarily religious and moral rather than intellectual or esthetic. Moreover, the other-worldliness which characterized the religious life of this period was diametrically opposed to that interest in human life and its environment which is the mainspring of all cultural activity. Even in the passage quoted from Cassiodorus (p. 78) it is to be noted that the study of pagan culture is by no means advocated with enthusiasm, or for its own sake, but as a necessary preparation for the study of the Scriptures.

Yet, as has been pointed out above, some measure of the school learning of the Romans was absolutely essential as a propædæutic to what later became the central subject of theology and as a preparation for the professional duties of clerical monastic life.

Olaus Magnus, in a description of the school-work of even the fifteenth and sixteenth centuries in Scandinavia, writes; "Those that are sent to school are

sent with this intention that with God's aid they may become clergymen."

Though the schools of this period may be divided, so far as their external connections are concerned, into monastic, cathedral, parish, and other classes of schools, they all gave instruction in more or less of the same fixed course of study, and this was nothing else than the course followed in the later pagan schools of Rome, and which had there already become so fossilized as to be capable of being set forth in such a cyclopedia as that of the pagan writer, Martianus Capella. A Bavarian synod of the eighth century speaks of instruction being given in the ecclesiastical schools of the time, "according to the traditions of the Romans."

In an atmosphere so unfavorable to purely secular learning as that of these professional religious schools, even a fresh and vigorous literary and scientific culture would find little opportunity for growth. As it was, the culture embodied in the seven liberal arts remained "like a substance in suspension in a medium incapable of absorbing it, and sank in a mass to the bottom. In itself it remained unchanged throughout the whole period; it was so much dead matter passed from hand to hand and was only modified by the rough and unskilful treatment it experienced during the process."

INFLUENCE OF MOHAMMEDAN LEARNING

At about the time when Christian medieval learning had reached a period of decline in the ninth and

tenth centuries, Arabic and Moorish Mohammedans were cultivating in their schools in Spain the learning which they had acquired in the last strongholds of Greek civilization in the East. Their work exerted a powerful and beneficent influence throughout Europe. At a time when in the rest of Europe few outside the Church could even read and write, the cities of Moorish Spain were centers of a brilliant though short-lived civilization, with populous 'universities' whose membership included the most learned men of the age. The Mohammedan scholars opened the way for those of the Christians to a much more extensive acquaintance than before with the science and philosophy of the Greeks, especially Aristotle. Further, they combined with Greek learning that of other civilized peoples with whom they had come in contact, particularly the Hindoos, whose system of notation we use and still call Arabic. The Arabic scholars made not unimportant contributions themselves to this fund of learning. They collected and systematized in the field of mathematics and natural science as well as in philosophy. Our language contains evidence of both the extent and the character of the Arabic contributions to our civilization in such words as 'algebra, alchemy, alembic,' etc.

CHAPTER VI

THE MEDIEVAL COURSE OF STUDY

THOUGH in its external form the Roman course in the seven liberal arts was maintained throughout the medieval period, the professional needs of the churchmen who were instructed in it inevitably modified its content. A prime requisite in clerical training was the ability to conduct, or at least to participate in, the church services. The instruction immediately essential to this was given in an elementary or song-school course preceding the grammar-school course in the trivium and including usually the following subjects:—

ELEMENTARY INSTRUCTION

Reading.—Reading was taught by the alphabetic method. After preliminary exercises with the pronunciation of letters, syllables, and single words, the reading in the Psalter was taken up.

Careful attention was paid to clear enunciation and correct accent. The Latin psalms thus gone over were then committed to memory. Inasmuch as Latin was still an unknown tongue to the beginner, this reading and memorizing was entirely devoid of

thought content. St. Gregory, Abbot of St. Martin at Utrecht, read so well at the age of fourteen as to win the praise of St. Boniface, yet he was unable to understand what he read. Chaucer's little chorister (see the 'Prioresses Tale,' II. 64-98) did not understand the words of the Latin hymn which he learned with so much pains. The fact that Charlemagne found it necessary to order that in the examination of priests and monks they should show themselves capable of changing the wording of the masses for the living and the dead, as circumstances required, from singular to plural or masculine to feminine, indicates that some of the clergy never acquired the ability to understand Latin.

Writing.—The first exercises in writing were taken up along with the exercises in reading. Wax tablets were used at first, and later, pen, ink, and parchment. In an age when all books were manuscript, writing naturally became one of the important industrial and fine arts. Students sometimes copied their own books, and some of the more skilful became professional copyists. In a writing exercise book which has come down to us from a monastic student of the fifteenth century, page after page is devoted to single letters, small and capital, frequently used words such as the names of the days of the week, the months, etc. The copies proper are stanzas or sentences generally of four lines each. The initial letters, which are elaborately flourished, follow in the order of the alphabet. The copies, like those of to-day, usually express some moral sentiment, e.g.:

“Est melior probitas quam nullo sanguine claret
Quam sit nobilitas quae probitate caret.”

“Uprightness of life without noble blood is to be esteemed
before nobility without honor.”

Music.—Music, which was so important an element in the services of the Church, demanded early and careful attention in the clerical course of study. With the exception of grammar no subject made such great demands upon the time and the energies of the pupil. The Gregorian chant was generally adopted and in the time of Charlemagne, as at present, was the subject of numerous capitularies. The notation, consisting of little strokes, hooks, and points above the text, was not only complicated but indefinite. While the musical training essential to the performance of the church services was one of the chief ends of the elementary instruction, the more scientific study of music ranked as one of the most important disciplines of the quadrivium.

Arithmetic.—Another subject which had a place both in the elementary course and in the quadrivium was arithmetic. Like music, it owed its place in the elementary course to the fact that it was indispensable in the professional training of the clergy, for every priest must be able to determine the dates of the holy days of the year. Charlemagne's Capitulary of 789 requires every churchman to be able to fix the order of the church holidays and to arrange the calendar for the year.

The methods were apparently those that had been

employed by the Romans. The work began with exercises in counting and in the representation of the numbers with the fingers (see p. 44). The most useful facts connected with the four fundamental operations were fixed in the mind through drill. There was little written calculation. With the clumsy Roman notation it was usually more convenient to use the fingers than the written symbol.

Latin.—In this elementary course a beginning was made in the use of Latin in conversation. The Latin equivalents of frequently used words and expressions were learned. Through collecting these the students made vocabularies and conversation books for themselves. In connection with this work some books curiously resembling some of our latest attempts in the writing of texts in modern languages have come down to us. One by Alexander Neckam, in the twelfth century, gives in Latin, with an interlinear gloss in Old French, a description of the various parts of a house, of the different occupations of men, and so on. Another, by Alfric, a priest, gives in Anglo-Saxon and Latin a series of informal conversations between the teacher and pupils upon the more interesting features of their ordinary surroundings.

In connection with these exercises the more fundamental of the elements in grammar were studied, the parts of speech, the declensions, and the conjugations.

The aim of the course.—In many instances, particularly up to the eleventh century, the elementary course sketched above constituted the whole of the non-theological training for an ecclesiastical career.

Indeed, this fact seems to have determined the character of the course, for it is not so much a propædæutic to the seven liberal arts as it is a grouping together of those subjects some knowledge of which was considered absolutely essential to the performance of the clerical functions. In the life of the Abbot John of Gorze, who lived in the tenth century, a detailed account of a theological course of the time is given as follows: 1. Elements of grammar and the first part of Donatus. 2. Repeated reading of New and Old Testaments. 3. Mass prayers. 4. Rules of church time reckoning. 5. Decrees of the church councils. 6. Rules of penance. 7. Prescriptions for church service. 8. Worldly laws. 9. Collection of homilies. 10. Tractates on the Epistles and Gospels. 11. Lives of the saints. 12. Church music. It will be noted that this includes little more of secular instruction than the elementary course which has just been outlined.

DIFFERENCES BETWEEN THE WORK OF DIFFERENT SCHOOLS

Though everywhere the course of study, whether partial or complete, conformed to the same general plan of an elementary course followed by the trivium and quadrivium, yet among the different schools the greatest variety prevailed. In some instances, as has just been noted, the work was limited to those studies absolutely indispensable for church service. In many little was attempted beyond the trivium. In others a relatively great amount of attention would be paid

to certain of the subjects of the quadrivium. In one school would be a famous grammarian, in another a famous dialectician or exegete. Seldom did a school possess eminent teachers in all subjects. Hence arose the custom among the more zealous and talented students of traveling from one school to another. This custom survives in the German universities of to-day. Students of especial talent, or occasionally even teachers, received grants from the funds of the cathedral or monastery in order that they might study at some of the greater centers of learning. The traveling fellowship is not, therefore, a purely modern institution.

THE TRIVIUM

As a rule grammar, rhetoric, and dialectic, the literary subjects of the trivium, preceded the more mathematical and scientific studies of the quadrivium, namely, arithmetic, geometry, music, and astronomy. There was little uniformity as to the order in which the subjects within these classes were taken up, except that grammar, of necessity, came first.

GRAMMAR

The fact that these subjects were all to be studied in Latin, and that Latin was the language of the Church, gave to grammar the first place in the curriculum, first not only in order of time but in order of importance. Among the Romans grammar included literature, and the term retained this meaning throughout the Middle Ages. But although the medieval course in grammar involved the reading of

the poets, the fact that the language was no longer native, but foreign, and the necessity of mastering it as a means of expression, together with the narrow religious spirit of the times so unfavorable to literary culture, brought it about that the work became almost exclusively grammatical in the narrow modern sense of the term. There was little appreciation of the literary excellence of the poems read. They were prized rather as containing exemplifications of the rules of grammar. To the medieval scholar, however, the importance of grammar rested upon the fact that it opened the way into the world of learning in those times so difficult of access. In the *Glossa notabilis* to the 'Doctrinale' grammar is defined, ostensibly according to Isidore, as "The doorkeeper of all the other sciences, the apt expurgatrix of the stammering tongue, the servant of logic, the mistress of rhetoric, the interpreter of theology, the relief of medicine [*medicinae refrigerium*], and the praiseworthy foundation of the whole quadrivium." In a legal document conveying at the close of the medieval period the Grammar School of Manchester to twelve trustees, it is stated that "the liberal science or art of grammar is the ground and foundation for all other liberal sciences, which source and spring out of the same, without which science cannot perfectly be had, for the science of grammar is the gate by the which all other be learned and known in diversity of tongues and speeches." To such an extent did this subject predominate that our intermediate schools are still called 'Grammar Schools.'

"A need for Latin," says Leach, in discussing medieval school-work, "was not confined to the church and the priest. The diplomatist, the lawyer, the civil servant, the physician, the naturalist, the philosopher wrote, read, and to a large extent perhaps thought in Latin. Nor was Latin the only language of the higher professions. A merchant, or a bailiff of a manor wanted it for his accounts; every town clerk or guild clerk wanted it for his minute book. Columbus had to study for his voyages in Latin; the general had to study tactics in it. The architect, the musician, every one who was neither a mere soldier or a mere handicraftsman, wanted, not a smattering of grammar, but a living acquaintance with the tongue, as a spoken as well as a written language."

In this study of grammar the medieval student was brought into a hand-to-hand struggle with Latin, which was not only the barrier which separated him from the learning of his time, but was the difficult language in which as a scholar and as a churchman he must learn to express himself.¹ These ends, and particularly the latter, outweighed all others. To them all literary studies were entirely subordinated. Hence the line between grammar and rhetoric does not seem to be clearly drawn. Cassiodorus defines the former as "The beautiful art of speaking derived from the illustrious poets and ora-

¹ For an account of the work in the cathedral school at Chartres, perhaps the greatest center for the study of grammar in its day, see Poole, 'Ill. of Hist. of Med. Thought,' 119-124.

tors. Its function is that of composing correctly prose and verse; its end is to please through skill in polished and faultless speech and writing."

Method.—The texts were written in the strange and difficult tongue which it was the object of the study to master. Hence the teachers were under the necessity at first of interpreting them word for word. All books were manuscript and hence rare and expensive. Often only the teacher had one, from which he dictated the lesson to be learned. The pupils repeated it until it was fixed in their minds and wrote it out on their waxen tablets. The lessons were repeated aloud. In the life of St. Maglorius the boys ask permission to go down to the seashore so that they may not disturb the sleep of the monks by their loud repetitions of their lessons. The rules were illustrated by passages from the poets, especially Virgil.

Text-books.—The book in almost universal use for beginners was the 'Ars Minor' of Donatus, a text admirably fitted for this purpose both by its clearness and conciseness and its catechetical form. Cassiodorus, after mentioning some of the other grammarians whose writings were known in the Middle Ages, such as Palæmon, Phocas, Probus, and Cesorinus, states: "Nevertheless, we give Donatus the chief place [Nobis tamen placet in medium Donatum deducere]; since he is shown to be especially suitable for boys and beginners." Perhaps no text-book has ever had so wide a vogue through so long a period. The word 'Donat' or 'Donet' came to mean a primer or text, not only in grammar, but in other subjects as

well. Like many of the texts of the pre-scholastic period, it is in the form of questions and answers, usually brief and simple. It discusses merely the eight parts of speech and begins as follows: "How many parts of speech are there? Eight. What are they? Noun, pronoun, verb, adverb, participle, conjunction, preposition, interjection. What is a noun? A part of speech with case signifying a body or thing particularly or commonly. How many attributes have nouns? Six. What are they? Quality, comparison, gender, number, figure, case. In what does the quality of nouns consist? It is two-fold, for a noun is said either of one and is proper, or it is said of many and is common. What are the degrees of comparison? Three. What are they? Positive as *doctus*, comparative as *doctior*, superlative as *doctissimus*. What nouns are compared? Common nouns signifying quality or quantity. The comparative degree serves what case? The ablative without a preposition, for we say '*doctior illi*.' "

At a time when all books were written it was much easier than it is now for a teacher to change a textbook to suit himself, and, indeed, Donatus underwent excisions, interpolations, and additions of all sorts at the hands of various teachers. It became almost a matter of professional pride for every teacher to make his own Donatus. A passage printed in Keil complains of this: "Donatus's book of the arts has been so vitiated and corrupted by many, since any one either adds to it at will what he has seen in other authors or inserts declensions and

conjugations and other things of this sort, so that it can scarcely be found uncorrupted and entire, as he published it, except in the ancient codices."

The larger treatise by Donatus is still much more concise than most of the other grammatical treatises in use in the Middle Ages. It is divided into three books. In the first he discusses sound, letters, syllables, feet, tones, and pointing, i.e. interpunction, the old method of punctuation. In the second he treats of parts of speech, the noun, pronoun, verb, adverb, participle, conjunction, preposition, interjection. The third book contains chapters on barbarisms, solecisms, and other errors of speech, also on metaplasms and the figures of speech. Compared with these the treatise most frequently used in advanced courses, namely, that of Priscian, is monumental in size, consisting as it does of eighteen books (not, of course, volumes). The author seems to have aimed at the comprehensiveness of the Greek grammarians. The work opens with the definition and classification of sounds into, articulate, inarticulate, literate, and illiterate; following this the whole of the first book, occupying some thirty-eight quarto pages in Keil, is taken up with the discussion of the letters one by one, their sounds, the changes they undergo, their combinations, etc.

Priscian's 'Partitiones Duodecim Versuum Aeneidos Principalium' must have been a relatively interesting and instructive book to medieval students. It is a thorough grammatical analysis of twelve verses, consisting of the first from each book of the 'Eneid'

and is in the question and answer form. The following are specimen extracts: "Scan the verse. *Arma virumque ca no Tro iae qui primus ab oris*. How many cæsuras has it? Two. What are they? Semi-quinary and semi-septenary. How many parts of speech has this verse? Nine. How many nouns? Six, *arma, virum, Troiae qui, primus, oris*. What part of speech is *arma*? Noun. What kind? Appellative. What species? Common. Of what gender? Neuter. Why? Since all nouns which end in the plural number in *a* are neuter. Of what figure is it? Simple. Form a compound from it. *Armiger, armipotens, semermis, inermis, inermus*. What is its case in this place? Accusative. How do you know? From the structure, that is, from the arrangement and connection of what follows. For '*cano*' governs the accusative; therefore if ever you come across such an arrangement, in place of the neuter place a masculine or feminine the accusatives of which are not like the nominatives, and the case will be manifest to you, as in this verse he says '*cano virumque*.' "

The texts of Donatus and Priscian were by far the most popular in the early Middle Ages. Even in the thirteenth century it was said,

"Die besten die wir an grammatica han,
das was Donatus und Priscian."

It was in this century that the popularity of these texts began to be overshadowed by that of the versified grammar of Alexander de Villa Dei, the '*Doctrinale*.'

Among the other grammarians whose works, complete or fragmentary, have been preserved are Charisius, Diomedes (both probably of the fourth century), Probus, Servius, Cledonius, Pompeius, Julianus, Consentius, Phocas, Eutyches, Augustine, Palæmon (?), Asper, Macrobius, Victorinus, Cæsius, Bassus, Fortunatianus, Terentianus (who wrote in verse), Rufinus, and Dositheus. Of the writers later than Donatus the greater number either accept him as their chief authority or merely comment on his work.

In the thirteenth century, as already noted, a new grammar in verse, the 'Doctrinale' by Alexander de Villa Dei, came into vogue. The serious use of such a work as a school text it is difficult for one in our time to understand. The work seems to have been the result of an extension of the practice of versifying certain passages in grammar to the whole work. The formation of the genitive of nouns in the third declension is discussed as follows:

"Format nomen in a genitivum tis sibi juncta.
is facies ex e, veluti mare sive sedile.
onis habes ex o: sed inis do perficit et go
femineo genere, nemo sociatur homoque.
ordo vel margo, cardo, cum turbine virgo.
sic et Apollo facit; Britonisque Brito, caro carnis.
las lactis ponit, allec habebit.
is post l pone; sed lis mel felque dedere."

(*'Doctrinale,'* V. 99-106.)

Another grammar in verse which had considerable vogue in the thirteenth century, and was used in the schools of Paris until the end of the fifteenth, was the 'Græcism' of Ebrard.

When sufficient knowledge of Latin had been acquired, exercises in reading were taken up, the aim now being to train not merely to enunciate clearly as in the elementary course, but to get the meaning of the passage. The reading selections seem to the students of to-day strangely familiar, for many of them known as the fables of Æsop are still widely used in modern readers. These fables were probably first translated into Latin by Phædrus in the first century. They were thrown into a variety of forms in prose and verse during the succeeding centuries by imitators of Phædrus as well as by imitators of these imitators. Indeed, so diligently were they re-written that the original Phædrus sank into oblivion. One of the most widely read of these emulators of Phædrus was Avianus, the date of whose writings is placed anywhere from the second to the sixth century A.D. The following from the version of Walter, the Englishman, in the twelfth century, will serve to illustrate one of the forms in which these familiar fables appeared in the medieval readers.

“DE VULPE ET CORVO

“Vulpe gerente famem Corvum gerit arbor; et escam
 Ore gerens Corvus, Vulpe loquente, silet;
 Corve decore decens, cygnum candore peraequas;
 Si cantu placeas, plus ave quaque places.
 Credit avis, pictaeque placent praeludia linguae;
 Dum canit, ut placeat, caseus ore cadit.
 Hoc fruitur Vulpes; insurgunt taedia Corvo,
 Asperat in medio damna dolore pudor,
 Fellitum patitur risum, quem mellit inanis
 Gloria; vera parit taedia falsus honor.”

The majority of the fables most familiar to the children and adults of to-day, and still common in our readers, such as 'The Wolf and the Lamb' and 'The Fox and the Grapes,' are to be found in these reading texts of the medieval schools.

Some of these versions of the fables, notably those of Odo of Sherrington, manifest a strong moralizing tendency. This tendency, no doubt, accounts for the extensive use of a collection of maxims known as the 'Disticha de Moribus Catonis.'

The book contains fifty-six brief proverbs (*sententiæ*), most of them consisting of two words each. No doubt the brevity of these, as well as their moral content, recommended their use as primary reading exercises. They remind one irresistibly of modern copy-book headlines. The first six are: I. *Itaque Deo supplica.* II. *Parentes ama.* III. *Cognatos cole.* IV. *Magistrum metue.* V. *Datum serva.* VI. *Foro pare.* Following the *sententiæ* are the 145 distichs divided into four books. The following will serve as specimens:

Lib. II. Distich IV. "Do not get enraged and quarrel over some doubtful matter: wrath impedes the mind, so that we cannot discern the truth."

Lib. IV. Distich XIX. "Learn something, for when fortune suddenly flees art remains and never fails the life of man."

Among the most interesting of the reading-texts used in the schools of the earlier Middle Ages was the 'Eclogue,' ascribed to Theodulus and written probably in the ninth century. The poem, which is alle-

gorical in character, has the didactic purpose of demonstrating the superiority of Christian dogma to pagan superstition. A flute-playing shepherd, Pseustis (Falsehood), challenges a shepherdess Alithia (Truth), whose playing of the cithara had charmed both the neighboring stream and her flock into silence and immobility, to a contest. Fronesis, another shepherdess, is chosen as a judge. In alternate quatrains of Leonine verse, Pseustis, the champion of paganism, and Alithia, who represents Christianity, sing the great events and the great heroes associated with their respective beliefs. The contest opens as follows, with the pagan account of the creation:

“PSEUSTIS

“ Saturn, the first, comes from the shores of Crete
Disposing his glorious offspring (aurea-saecula) through
all the earth:
No progenitor had he, nor was any one older.
As sire he rejoiced in a noble progeny of deities.”

Alithia responds with the Christian account.

“ The first man was a dweller in verdant paradise.
Until, his wife persuading him, he drained the viperous
venom,
By this mixing the draught of death for all:
The descendants still suffer for the crime which their
parents committed.”

Pseustis's account of the peopling of the earth after the deluge by Deucalion is matched by Alithia's account of the life of Noah; similarly the story of the

uprising of the giants against the gods is paired with that of the building of the tower of Babel; to Cadmus, the inventor of the literary arts of Greece, is opposed Moses, who mediated to the Jews the learning of the Egyptians, and so on.

The poem, it will be seen, was admirably adapted for correlation with the great central subject of theology. Its widespread use as a reading-text in the schools is evidenced not only directly in records that have been preserved, but by the great number of manuscript as well as printed copies of various editions which still exist. Rabelais refers to it as one of the well-known school texts of the Middle Ages.

The form of the poem ¹ can best be shown by an example.

“ALITHIA

“Samson, exuviis indutus membra leonis,
Sternit mille viros, devastat vulpibus agros,
Urbis claustra tulit, nervorum vincula rupit;
Fraude sua tandem praecidit Dalila crinem.”

These books were not only translated carefully word for word, but numerous passages were learned by heart. Of the classical poets, Virgil was the most widely read, probably not because of his excellence as

¹ There seems to be much difference of opinion as to the proper scansion of medieval Leonine verse. Besides the regular hexametric scansion Dr. Theodate L. Smith suggests the following, in which the natural accent is preserved.

Sámsōn | ēxŭvī | īs || in | dūtūs | mémbră le | ōnīs.

If in the modern fashion we accent the rhyming syllables and neglect classical traditions we get such a jingle as the following,

Sámsōn | ēxŭvī | īs || īndūtūs | mémbră | lēōnīs.

a poet, but because most of the examples in Donatus and Priscian were derived from him. But great freedom of choice was exercised. The taste of the teacher and the character of the books at hand usually determined the selection. Where the ascetic tendency was strong the reading was largely confined to the Christian poets, especially Juvenius, Sedulius, and Prudentius, the "disertissimus atque christianissimus poeta." At the cathedral school at Speier, under Bishop Balderich (970-986), besides Virgil—Horace, Persius, Juvenal, Statius, Terence, Lucan, Martianus Capella, and Boëthius were read. The list made out in 1280 by Hugo of Trimberg, schoolmaster in Bamberg, includes, in addition to the above, Ovid and the Christian poets. The modern principle of apperception was frequently observed in that the study of an author was often prefaced by an account of his life and of the circumstances under which the various poems were written. Collections of such brief introductions, known as 'accessus ad poetas,' are preserved in two MSS. from the twelfth century. Much labor was apparently devoted to the task of expounding the authors read. The commentaries of Servius were used in the study of Virgil.

An extract or two from the comments of Servius on the first two or three words of the Eneid, "Arma virumque," will show how exhaustively this work was carried out.

"'Arma virumque,' etc. Many discuss variously why Virgil should begin with 'Arma.' We understand 'arma' to signify 'war,' and it is the trope

Metonymy. For he places 'arma,' which we use in war, for war. So the toga, which we use in times of peace, is used for peace: as in Cicero: 'They exchange their arms for the toga,' that is, war for peace. It is a familiar figure that we should reply not in the same order in which we have proposed. For first he speaks of the wanderings of Eneas: afterwards of war. We use this figure also in prose. Thus in Cicero's oration against Verres. Some think here we have the figure of hyperbaton, transposition of words, as if the sense were thus: 'Arma virumque cano, genus unde Latinum Albanique patres atque altae moenia Romae'; then you go back to the words 'Trojae qui primus ab oris,' etc. Others think the word 'arma' properly used in this place; first, because they were victorious; secondly, because they were divine; thirdly, because he always subjoins man to arms," etc.

The commentaries of medieval origin, very many of which have come down to us, contain flagrant errors. In one, 'provincia' is said to be an adverb meaning 'swiftly.' 'Circenses' is derived from 'circum enses' "because on one side ran the river, on the other they set up swords, and between the two was the race-course."

But, as already stated, the main object was not adequate appreciation of the content of a literary masterpiece, but the development of skill and readiness in expressing one's self in Latin. Hence the emphasis was laid upon extensive reading and the diligent memorizing of entire poems. Ability to ex-

press one's self readily in Latin was considered the sign of a good grammatical education.

Rhetoric.—It is scarcely to be expected that an art designed to train for public life should flourish in the schools of the medieval clergy, a class whose religious instincts and beliefs led them to retire from the world. The subject was studied in medieval schools along with the others of the traditional Roman course in the seven liberal arts, but the relative fewness of the texts and commentaries on it that have come down to us are an indication of the indifference with which it was regarded. "All that remained of classical rhetoric, properly speaking, was the configuration, the terminology, certain definitions, and especially that part relating to tropes and figures which had already in ancient times formed the connecting link between rhetoric and grammar, the former thereby becoming as it were a sort of appendix of the latter." In the few schools where special attention was given to rhetoric, Cicero's treatises 'Ad Herennium' and 'De Inventione' were studied. Elsewhere briefer works based upon these were used, such as the passages treating of the subject in the cyclopedias of Martianus Capella, Cassiodorus, Isidore, and others.

The position of the clergy as the distinctively literate class in medieval society imposed upon them the task of not only carrying on much of the important correspondence of their time, but also that of drawing up wills, deeds, and other legal documents.

The Carolingian laws prescribe that the clergy

must have the ability to write "Letters and documents." "Every man of importance," writes Wattenbach, "had to have a cleric about him to look after his correspondence." The educational need thus created was met through a modification of the exercises in prose and metrical composition, the 'dictamen poeticum' and the 'dictamen prosaicum.' The latter, the dictamen prosaicum, became a subject of great importance and came to consist chiefly in training in the art of writing letters and legal documents. The study of the latter led to the study of the law, which later developed into an independent department of study in the medieval universities.

Law.—The study not only of canon but of civil law seems always to have been an important part of the early medieval curriculum. Alcuin mentions it as a part of the course of study at York. Aldhelm, in his account of his studies at Canterbury, speaks of "becoming acquainted with all the secrets of Roman Jurisprudence." Boniface writes of the difficulty of "investigating thoroughly the prescriptions of the Roman laws." Hartman v. Aue even speaks of it as if it were the chief subject of the course in the twelfth and thirteenth centuries.

"In seinem elften Jahr
In Wahrheit sag ich, war
Kein besserer Grammaticus,
Als hier das Kind Gregorius . . .
Von legibus las er nachher
Es ward das kluge Kind gar sehr
In dieser Kunst nach kurzer Frist
Ein tüchtiger Legist."

The large part played by churchmen in the statecraft of the medieval period explains the time and effort devoted to this subject. Though apparently treated in some schools as a separate subject, it was interpolated, as we have seen, among the subjects of the trivium.

The somewhat meager curriculum of Abbot John of Gorze (see p. 97) includes the study of the 'worldly laws' as well as of the decrees of the church councils.

The methods employed in teaching letter-writing and conveyancing resemble those of our best modern schools. The letters of eminent persons and documents of all sorts were collected as models; these made up most of the contents of the medieval Letter-writers and Formulæ Books. But, as too frequently happens, one result of this school activity was to make the art stiff and formal. Text-books on the art which begin to appear in the eleventh century expatiate upon each of the five divisions of a letter: 1, the *salutatio* or greeting; 2, the *captatio benevolentiae*, or the way to make a good impression, in regard to the matter in hand, upon the person addressed; 3, *narratio*, the able statement of the subject of the letter; 4, *petitio*, the proper method of making a request or a demand; 5, *conclusio*, the fitting conclusion. Great demands were made upon the imagination in affording the students practice in this art. All sorts of conceivable cases, including even negotiations between kings and the issuing of imperial manifestoes were invented as the basis for these exercises.

“In one part of this city” (sc. of rhetoric), says a medieval writer describing the rhetorical work of the schools, “princes of the church compose decrees, in another kings and judges issue edicts. Here the decrees of synods are promulgated, there the laws of the forum are treated. In this city Tully teaches wayfarers the art of ornate speech.”

It was these practical exercises in letter-writing and conveyancing that, together with the study of civil law, constituted the course called rhetoric in most of the medieval schools.

Dialectic.—In close connection with rhetoric was taken up the remaining subject of the trivium, that of dialectic. While on the one hand it was free from any taint of paganism, on the other it was better calculated than either grammar or rhetoric to appeal to those intellectual interests which found in the religious conditions of the Middle Ages a not uncongenial environment. When in the twelfth and thirteenth centuries theology came to be treated not as mere dogma, but as a rational science, dialectic, outstripping even grammar, rose to the first place among the seven liberal arts. The science was highly recommended by Rabanus Maurus in the ninth century as a means of detecting falsities in the arguments of heretics.

In Fitzstephen's description of the work of the London schools of his day, in the preface to his life of Becket, we see the strong influence exerted by dialectic upon the spirit of the school-work of the twelfth century. “Upon the Holidays assemblies flock together about the Church, where the Master hath his

abode. There the Schollers dispute; some use demonstrations, others topically and probable arguments; Some practice Enthimems, others are better at perfect Syllogismes; Some for a shew dispute, and for exercising themselves, and strive like adversaries; Others for truth, which is the grace of perfection. The dissembling Sophisters turne Verbalists and are magnified when they overflow in speech; some are also entrapt with deceitful arguments. Sometime certaine Oratours with Rhetoricall Orations, speake handsomly to persuade, being careful to observe the precepts of art, who omit no matter contingent. The Boyes of diverse Schooles wrangle together in versifying, and canvase the principles of Grammar, as the rules of the Preterperfect and Future Tenses. Some after an old custome of prating, use Rimes and Epigrams; these can freely grip their fellowes, suppressing their names with a festinine and railing liberty, these cast out most abusive jests, and with Socraticall witnesses either they give a touch at the vices of Superiours, or fall upon them with Satyricall biternesse. The hearers prepare for laughter, and make themselves merry in the meane time."

As texts the medieval students possessed Latin translations by Boëthius of Aristotle's 'Categoriae' and 'De Interpretatione,' also Boëthius's commentaries on Aristotle, 'De Syllogismis Categoricis,' 'De Syllogismis Hypothecis,' 'De Differentiis Topicis' and 'De Divisionibus,' as well as his translation of Porphyry's 'Isagoge, or Introduction to Aristotle.' In addition to this, dialectic was treated in the cyclo-

pedias already mentioned of Martianus Capella, Cassiodorus, and Isidore. Richerus describes the course given by Gerbert in the cathedral school at Rheims, near the close of the tenth century, as follows: "First he explained the 'Isagoge,' that is, Porphyry's introductions to the categories of Aristotle according to the translations of . . . Victorinus and . . . Boëthius. Then he explained Aristotle's book of the 'Categories or Predicates,' and in suitable fashion made his pupils acquainted with the difficulties of the book . . . 'De Interpretatione.' Then he presented the topics, that is, the doctrines of the source of proof, which Tully has translated from Greek into Latin, and which . . . [Boëthius] has explained in a commentary in six books. With the same industry he read and explained the four books of the categorical and the three books of the hypothetical conclusions, the book of definitions, and the book of divisions."

On the authors mentioned commentaries were written. Brief compends were made for school use. The study was enlivened by the fact that the principles of reasoning and of argumentation learned were applied in practical exercises in disputation as in the instances cited by Fitzstephen. (See p. 115.) Theological questions were the standard subjects of disputation. In fact, dialectic grew into primacy among the seven arts as an auxiliary in the development of the great central subject of theology. The Scriptures, formerly studied with the aid of grammar and the church fathers, were now studied more and more from the standpoint of logic. As will be noted elsewhere, it was in connection with the devel-

opment of the two allied sciences of theology and dialectic that the teachers and students in attendance at the church schools of Paris increased in numbers and gradually organized themselves into a university.

THE QUADRIVIUM

Although the trivium together with the elementary course afforded a sufficient foundation for the work in theology, nevertheless those who desired a complete course of instruction took up in detail the study of the subjects of the quadrivium; arithmetic, geometry, music, and astronomy. Some smattering of these subjects was afforded even in schools that did not give a regular advanced course. In the greater centers of medieval learning, such as St. Gall, Reichenau, Rheims, systematic and extended courses in these subjects were given. The work was considered of great difficulty and suitable only for those who were especially talented. Gerbert gave instruction in mathematics to those only who possessed the requisite capacity. The other students were required, however, to gain at least some knowledge of the four sciences. Knowledge of the essentials of at least three of them, music, arithmetic, and astronomy, was, as we have seen, indispensable in the training of the clergy.

Arithmetic.—The elementary course already described (see p. 95) seems to have comprehended about all of the subject that was of practical value. In the treatises used in the advanced course in the early Middle Ages much space was devoted to Pythagorean cogitations upon the mystical attributes of numbers. Martianus Capella's chapter on the num-

ber 4, for instance, runs as follows: "What shall I call four? in which is a certain perfection of solidity; for it is composed of length and depth, and a full decade is made up from these four numbers added together in order, that is, from one, two, three, four. Similarly a hundred is made up of the four decades, that is, ten, twenty, thirty, forty, which are a hundred; and again four numbers from a hundred on amount to a thousand, that is, 100, 200, 300, 400. So ten thousand is made up of another series. What is to be said of the fact that there are four seasons of the year (*quid quod quatuor anni tempora*), four quarters of the heavens, and four principles of the elements? There are also four ages of man, four vices, and four virtues." This sort of thing seems to have been quite in harmony with the spirit of early medieval learning, and it is interesting to note Rabanus Maurus's application of it in scriptural exegesis. "A real thinker," he says, "will not pass on indifferently when he reads that Moses, Elijah, and our Lord fasted forty days. Without strict observation and investigation the matter cannot be explained. The number 40 contains the number 10 four times, by which all is signified which concerns the temporal. For, according to the number 4, the days and the seasons run their course. The day consists of morning, midday, evening, and night, the year of spring, summer, autumn, winter. Further, we have the number 10 to recognize God and the creature. The three (trinity) indicated the Creator; the seven, the creature which consists of body and spirit. In the latter

is the three: for we must love God with our whole heart and soul and mind. In the body, on the other hand, the four elements of which it consists reveal themselves clearly. So if we are moved through that which is signified by the number 10 to live in time—for 10 is taken four times—chaste, withholding ourselves from all worldly lusts, that means to fast forty days. So the Holy Scriptures contain suggestively in many different numbers all sorts of secrets which must remain hidden to those who do not understand the meaning of numbers.” About one-third of Martianus Capella’s treatise is given up to the discussion, similar to that quoted above, of the attributes of the first ten numbers, the rest treats of the nature of number and of the different classes of numbers (odd, even, composite, perfect, imperfect, pluperfect, plane, solid), also of ratio, multiples.

Notwithstanding the exhortation of Rabanus Maurus, the science of arithmetic, aside, of course, from its practical applications in the ‘computus’ and ordinary calculations, fell more and more into neglect until it was revived through the genius of Gerbert, afterwards Pope Sylvester II, in the tenth century. His mathematical knowledge, though to a modern it seems very modest, sufficed to achieve for him the reputation of a wizard. Aided by the study of some long-neglected mathematical treatises by Boëthius he constructed an abacus or reckoning table which facilitated the process of multiplying and dividing with the clumsy Roman notation. The table contained twenty-seven vertical columns. The value of

a number depended upon the column in which it was placed. IV in the column to the right would signify 4 units, and in the next to the left 4 tens, in the next 4 hundreds, and so on. On this plan 57042 would be expressed as follows:

$$\begin{array}{ccccc} \bar{X} & M & C & X & I \\ \hline V & VII & & IV & II \end{array}$$

The methods of multiplying and dividing, though no doubt a great advance on

older methods, seem to us tedious and complex. Division with any but the smallest numbers had been up to that time an extremely difficult operation. Gerbert's method may be called that of Division with Decadic Difference. The divisor was increased by the smallest number that would make it a multiple of ten. For instance, to take a very brief example, 97 is to be divided by 16. Using the Arabic notation for the sake of clearness, the operation would be performed about as follows:

$$\begin{array}{lcl} & 97 \div 16 & \\ (a) & \begin{array}{r} 97 \\ 80 \\ \hline 17 \end{array} & \div 20 = 4 \\ (b) & 17 & \\ (c) & 16 & \\ (d) & \begin{array}{r} 33 \\ 20 \\ \hline 13 \\ 4 \\ \hline 17 \end{array} & \div 20 = 1 \\ (e) & \begin{array}{r} 17 \\ 16 \\ \hline 1 \end{array} & \div 16 = 1 \\ \text{Remainder} & 1 & \text{Quotient } 6 \end{array}$$

(a) 16 is increased by 4, the least number which added to it will make it a multiple of 10 (i.e. 20), 20 is contained in 97, 4 times, leaving a remainder (b) of 17. But each 20 was too great by 4, hence with the 4 twenties, an excess of 4 fours or 16 was taken away. The 16 (c) is added,

therefore, to the remainder, making 33. This again

divided by 20, giving a quotient of 1 (d) and leaving a remainder of 13. In taking away 20, we took 4 too much. This is restored by adding it to the remainder 13, making a total of 17 (e). This is divided by 16, leaving a quotient of 1 and a remainder of 1. The quotients 4, 1 and 1 are now added, making 6. Hence $97 \div 16 = 6\frac{1}{16}$.

With larger numbers and with the addition of fractions to the divisor the above operation became enormously complicated, and it is no wonder that William of Malmesbury, speaking of Gerbert's rules of computation, states that they "are scarcely understood by the sweating abacists." Before Gerbert's time the above problem would have been solved by writing down in order all multiples of 16 not greater than 97 (thus 16, 32, 48, etc.). Counting these multiples gave the quotient, the remainder was obtained by subtracting the largest multiple from the dividend. With large numbers the method was tedious and laborious.

The Arabic notation, which is not only, like Gerbert's reckoning table, based on the decimal system, but which has also a symbol for zero, came into use in Europe in the thirteenth century, and replaced the older method only in the three or four following centuries, so conservative are men in matters of this sort.

Geometry.—As among the Romans, the term geometry was understood more in its literal sense than it is now. Cassiodorus discusses its definition as follows: "Geometry means in Latin the measure-

ment of the earth: since through the various forms of this discipline Egyptian lands are said to have been partitioned among the proper owners. The teachers of this discipline were formerly called 'mensores.' "

Among the Romans the term had come to signify largely what we mean by geography. Martianus Capella, whose chapter on geometry was the most widely used text on the subject up to the eleventh or twelfth century, discusses it under such heads as the following:—'Position of the earth.' 'The five zones of the earth.' 'Circuit of the earth.' 'Longitude of the earth.' 'Spain.' 'The Pyrenees Mountains and the Province of Narbonne.' 'Italy.' 'Founders of cities.' 'Sicily.' Similarly he devotes chapters to other important regions of Europe and of Asia and Africa. The whole concludes with three chapters of a more mathematical character, in which the properties of plane and of solid figures are discussed. It will be noted that the course as mapped out in Martianus Capella involves practically nothing of what we call geometry. Occasional passages are interesting because of the light they throw on the geographical knowledge of the time. Capella, for instance, adopts the theory of the sphericity of the earth. "The form of the whole earth is not plane as those estimate who liken it to the shape of an extended disk, nor concave as others believe who say that rain descends into the bosom of the earth, but round and spherical as the second Dicæarchus asserts."

In treating of little known regions Capella's descriptions, like those of Strabo and earlier writers, are likely to become fabulous. But unlike Strabo, he makes no apology for his presentation of a mixture of the true and the mythical. For instance, of central Africa he says: "Amidst these solitudes live the Atlantes, who have no names among themselves, and worship the sun which scorches them with their crops. They are never seen to sleep. The Troglydites remain in their caves and feed on serpents, and they make a grating noise [stridunt] rather than speak. The Blemmyæ are without head and they have the mouth and eyes in the breast. The satyrs have nothing human except the face."

The study of topography seems to have been facilitated by the use of maps and other illustrative material. In the eleventh century, in speaking of geometry, the statement is made that "Aratus spreads out the map of the world, on which he shows Asia, Africa, and Europe, and enumerates the mountains, cities, and rivers." Theodulf, of Orleans, describes a map which had been drawn up with unusual skill. The terrestrial globes, constructed by Gerbert, aroused general admiration.

Natural History.—In connection with this subject, some attention was paid to the study of natural history. Alcuin's list of the subjects studied in the Cathedral School of York includes "The five zones, the currents of the air, the movement of land and sea, and the nature of men and of wild animals."

Material for this study was derived largely from 'Libri Originum seu Etymologiarum' of Isidore of Seville. Rabanus's rather meager abridgment of this material entitled 'De Universo' was still more widely known.

The general interest in the varieties of animal life is indicated by the popularity of 'Physiologus,' a book originating in Christian antiquity and re-edited and enriched up to the thirteenth century. The book gave accounts, true and fictitious, of the characteristics of real and of fabulous animals, also of strange stones and trees. Its religious and mystic character suited the taste of the time. The qualities of the animal were connected with the doctrines of Christianity, and suggested moral reflections and symbolism. The following is an extract from an old English 'Physiologus' of the thirteenth century:

The Lion

"The lion stands on a hill, and when he hears people hunting or notices by the scent that a hunter is approaching, he fills up his footprints behind him with his tail, so that the hunter cannot find him."

Meaning

"High is the hill, that is, the kingdom of heaven, our Lord is the lion who lives there. When it pleased him to descend to the earth the Devil could not find out, although he diligently

searched, how he descended or where he concealed himself."

The study of geometry in the purely mathematical acceptance of the term seems to date from the discovery by Gerbert of the geometry of Boëthius, which contains an extract from 'Euclid.' Gerbert seems to have given practical instruction in land surveying based upon the study of some fragments of Roman treatises on that art found by him in the monastery of Bobbio.

Astronomy.—Not only was astronomy a part of the traditional Roman course in the seven arts, but it was a science of which practical use was made in the arrangement of the calendar. Rabanus Maurus considered it the duty of the clergy to study diligently that part of astronomy which "includes the investigation of the course of the sun, of the moon and the stars, and the change of the seasons, in order that they might be able to reckon the beginning of the Easter festival and the date of every holy day, and correctly inform their parishioners of these."

The subject generally involved the study of the division and the measure of time, the difference between time, reckoning according to the sun and according to the moon, the calendars of the Hebrews, Greeks, and Romans, the characteristics of the stars, the course of the seven planets, the meaning of the twelve signs of the zodiac. Among the texts most frequently used were the encyclopedia of Martianus Capella, Julius Hyginus's 'poetica astronomica,' and

Aratus's didactic poem 'Phænomena.' The first of these contains a chapter entitled 'That the earth may not be the Center for all the Planets,' an instance of a suggestion of the solocentric theory 1000 years before Copernicus. "Although Venus and Mercury," writes Capella, "rise and set daily, nevertheless their orbits do not go round the earth at all, but *they circulate in a somewhat wider course about the sun.*" Delambre, as quoted by Mullinger, states: "It is said that it was these few lines which Copernicus took as the subject of his meditations and which led him to his system of the world."

The methods employed were often quite objective in character. Richerus, the pupil of Gerbert, writes that "at night time when the stars shone in the heavens the teacher and his scholars observed the oblique course of the stars in the different regions of the sky." The students were shown how, by the position of the stars, they could determine the hour of the night, a matter of practical importance before clocks were invented, especially to monks who had in turn to hold watch and give the signal for the night service. Gerbert illustrated his lectures on astronomy with ingeniously constructed models. Notker Labeo gives a description of a celestial globe in the monastery at St. Gall. A manuscript from the same monastery contains a picture of a monk gazing at the stars through a telescope.

Music.—Music, the remaining subject of the quadrivium, was a subject of even greater practical im-

portance in the professional training of the clergy than arithmetic or astronomy. "Whoever," says Rabanus, "is not skilled in music is not in a position to perform the duties of an office in the church in a proper manner." The technique of music was acquired in the elementary course and in the regular participation in the church services. The study of music as part of the quadrivium was almost purely theoretical. Mere skill in singing or in performance upon musical instruments did not entitle one to be called a musician. Only the most capable students pursued the subject, to which arithmetic was considered a necessary propædæutic. Gerbert, the great scholar and teacher of the tenth century, upon the completion of his course in arithmetic, took up the work in music. "He demonstrated the different tones on the monochord, showed their consonance or harmony in tones, semitones, double and quarter tones, combined the tones into chords according to the rules of the art, and in this manner disseminated a thorough knowledge of music." Boëthius's treatise in five books was the standard text on this subject throughout the Middle Ages.

The cathedral school at Metz and later the monastic school at St. Gall were famous centers of musical culture. Of the latter it is written in the life of Notker that "Through different hymns, sequences, tropes, and litanies, through different songs and melodies as well as through ecclesiastical science the pupils of this monastery made the church of God famous not merely in Alemannia, but everywhere

from sea to sea." Of the St. Gall scholars and teachers, Notker, Ratpert, and Tautilo were famous composers.¹

¹ Scheffel's *Ekkehard*, Marty's *Wie man vor tausend Jahren lehrte und lernte*, in the form of a diary by Walafrid Strabo, in *Jahresbericht*, Kloster Einsiedeln, 1856-1857, and Zimmerman's *Ratpert* are works of fiction which give interesting and lifelike descriptions of monastic school-work. They seem to be based upon careful study of historical data.

CHAPTER VII

THE MEDIEVAL CHURCH SCHOOLS

(a) THE MONASTIC SCHOOLS

1. *The Functions of the Monastery in Medieval Society.*—The monasteries occupied in the social life of the early Middle Ages a place of great importance. They were the inns, the hospitals, the banks of the times. In some instances they were great centers of theological, medical, and legal learning as well as of liberal culture. They were centers, not only of learning, but of industry and art. Wealthy Benedictine monasteries such as St. Gall, Corvey, Reichenau, were famous for their architects, sculptors, painters, goldsmiths, etc.

2. *Extent of Educational Influence.*—In the early Middle Ages they had not only inner schools for novices, but outer schools for the laity and the secular clergy. A capitulary issued under Lewis the Pious and his advisers closed the schools in monasteries to all but those taking up the monastic life. How far this order was observed it is difficult to say. That it was not followed everywhere is proven by the subsequent history of the monastery of St. Gall, which, like Fulda and Reichenau, seems to have performed the functions of a university. Leach inclines to the belief

that the educational work of the monks in England was closely restricted to those of their own orders. He writes, "Whether the monks ever even affected to keep a grammar school for any but their own number, among whom outsiders were not admitted, is quite doubtful."

It was in the monasteries that the traditions of learning were best conserved and cherished in the ninth and tenth centuries. It was they that supplied upon the continent the need for advanced instruction which found expression in a petition presented by the bishops assembled at Paris in 829 for the establishment of three large public schools open to the monks and the clergy alike. In addition to the school within the monastery the monks frequently controlled as landlords schools in neighboring towns and villages.

The boys destined for monastic life, the 'oblats,' were from the first considered as members of the brotherhood. They participated in all religious services and took their turn in the performance of the other duties of the monks. The school, which they entered usually at the age of seven, stood within the inclosure of the monastery.

Wherever, as in some of the larger monasteries, provision was made for the instruction of boys who were not to become monks, a separate building was provided outside the walls.

3. *Buildings.*—The inner school was sometimes located in one of the covered walks of the cloister. Where schools were larger the buildings often inclosed a quadrangle. In St. Gall the church and the

schoolroom formed one side of this, while about the others were ranged the sleeping room, dining room, master's quarters, the sick room, study room, and living room. These opened not into each other but into the court, about which was the usual covered walk.

4. *Maintenance*.—Although no fees were charged for tuition, gifts from the pupils were accepted. In the case of wealthy students these were sometimes considerable. The widow of Richard, Lord of Molle, for instance, granted to the Abbot of Kelso, in 1260, her dowry of certain lands in return for the maintenance and education of her son among the 'majoribus et dignioribus scholaribus' of the monastic school.

The poor pupils were in some cases supported by the charity of the monastery or of other patrons; sometimes a pupil was able to work his way through by copying books or performing other services. Some became beggar students, wandering from school to school.

5. *Supervision of Conduct*.—The monastic school was directed by a 'magister principalis.' Great importance was attached to conduct. Numerous assistants were appointed to supervise the behavior of the pupils. Lupus of Ferrières, on sending his nephew and two other boys to the monastic school at Prüm, in the ninth century, wrote to the Abbot that the three boys were not to have more than two custodians.

The careful attention to the minutiae of deportment which characterizes the social life of the thirteenth, fourteenth, and following centuries, and which is

evidenced by the numerous books on etiquette dating from that period, marks also the discipline of the monastic schools. The manner of standing, of walking, the position and movements of arms and hands, dress, speech, gestures, and even facial expression all were punctiliously regulated. The rules of conduct copied in a monastic student's notebook recently discovered prescribe that the young man is to kneel when answering the Abbot, not to take a seat unasked, not to loll against the wall, nor fidget with things within reach. He is not to scratch himself nor cross his legs like a tailor. He is to wash his hands before meals, keep his knife sharp and clean, not to seize upon vegetables, not to use his spoon in the common dish. (See pp. 155-156.)

6. *Industrial Training*.—The Benedictine and other rules which prescribed regular manual labor for the monks made many of the monasteries centers of the industrial arts. According to Schuster the wealthy Benedictine monasteries at St. Gall, Hirschau, Corvey, Strassburg, Bremen, and elsewhere were famous for their skilled architects, sculptors, painters, and goldsmiths. Even Chaucer's delinquent monk, it will be remembered, "hadde of gold ywrought a curious pin." As demands for the products of skilled workmanship increased, the monks were forced to call in laymen to their assistance and, according to Schuster, among these workmen are to be traced the origins of the craft guilds.

7. *The Later Monastic Orders*.—When in the thirteenth century the Benedictine Order, grown

wealthy, relapsed into a condition of indolence and worldly-mindedness typified by the monks of Chaucer's prologue, monastic school-work fell largely into the hands of the younger and more vigorous orders, the Franciscans and the Dominicans, whose influence was felt not only in the lower schools but in the universities.

(b) CATHEDRAL AND COLLEGIATE CHURCH SCHOOLS

1. *The Collegiate Church*.—The changes most affecting the history of non-professional schools took place in the schools attached to the cathedrals and the collegiate churches. A collegiate church differed from a cathedral only in not having a resident bishop. It was a large church supported by endowment. Its functions were administered by a college, that is a collection or company of ecclesiastics consisting of a dean, canons, deacons, clerks, etc. Later there was a tendency to restrict the term to the clerical corporations of the churches at the university centers. Hence the modern acceptance of the term. But organized bodies of clergy connected with the large churches were originally just as much 'colleges,' that is, corporations, as those at the universities. From the first an essential function of these church colleges was the maintenance of a grammar school.

Notwithstanding occasional movements to restrict admission to those taking up the clerical career, the schools of the cathedrals and collegiate churches seem to have exercised a much wider and more direct influence upon the laity than did those of the monas-

teries. Alcuin's biographer tells us that Albert at the York cathedral school had round him "a flock of scholars from the sons of gentlemen," of whom only "some" were instructed "in the divine writings." Leach goes so far as to say that the cathedral school at York was "no mere choristers' school or ecclesiastical seminary," but that its students were "much the same kind as in the public school to-day."

2. *The Grammar School*.—The cathedral and college schools are so nearly identical in character that they may be discussed together. They performed a variety of educational functions. The cathedral or college grammar school afforded an education to the youth, usually of aristocratic birth, who were destined for ecclesiastical preferment, and to such lay students as desired a more advanced school education. The head of the school was frequently known as the Scholasticus. In the early times the custom arose of appointing the Scholasticus, on account of his learning, to the position of Chancellor. Hence later the two titles became practically synonymous.

3. *The Song School*.—The song school of the cathedral or collegiate church was apparently quite distinct from the grammar school. It was under the direction of the Precentor and was attended by poor students who in return for board, lodging, and tuition performed the duties of choristers. In the records of the cathedral school at York for 1307, Richard Craven agrees to teach and board seven choristers for 4s. 8d. a week.

The Close school in Salisbury was founded by Bishop Prove for the education of the choristers of the cathedral and endowed with £35 per annum. The choristers were eight in number and were clothed and instructed in Latin, writing, and arithmetic. In the song school the poor students, from which usually the ranks of the country clergy were recruited, obtained not only a musical but a general literary education. (See p. 93.) In time its work became confined to that of elementary instruction. It became a part of the regular duties of the song schoolmaster, i.e. the assistant to the Precentor, to teach 'the petties,' i.e. reading and writing. The older song-school pupil, to whom Chaucer's little chorister appeals for a translation of the Latin hymn, explains his inability to give it, by saying

"I learne song, I can but smal grammere."

(*'Prioresses Tale,'* v. 84.)

Those of its students who needed more advanced instruction entered the grammar school. In 1312 a dispute arose between the grammar and song schoolmasters of Beverley, as to whether all the choristers of the church, or only the original number of seven, were to be admitted free to the grammar school. The question was settled in favor of the former alternative.

Much difficulty arose in determining at what stage in the course of study the work of the song school ended and that of the grammar school began. In Warwick, for instance, both schools claimed the

Donatists or the pupils who were studying elementary Latin grammar. The settlement of the dispute is set forth in the Statutes of St. Mary of Warwick dating from the thirteenth century: "That all material for strife and disagreement which we learn has hitherto arisen between the Master and the Music Schoolmaster over the Donatists and little ones learning their first letters and the Psalter may be put a stop to forever, after due inquiry in the matter and with advice of our brethren, and so that the Masters of each of them may receive their due, and that undue encroachment of scholars on one side and the other may cease for the future; we decree and direct to be inviolably observed that the present Grammar Master and his successors shall have the Donatists, and thenceforward have, keep, and teach scholars in grammar or the art of dialectic, if he shall be expert in that Art, while the Music Master shall keep and teach those learning their first letters, the psalter, music, and song." The question was settled differently at different times and places.

Under certain conditions where the church and its schools were small, both seem to have been under the direction of the same teacher. Leach suggests that the combination of the two schools was necessitated by the scarcity of teachers resulting from the ravages of the Black Death.

The song school was probably attended not only by the regular choristers, but by others who sought an elementary or a musical education, and the latter seem to have paid fees. Hence probably the keen-

ness of the above-mentioned contest between the two schools over the Donatists, and hence the hostility of both, illustrated elsewhere (see pp. 140-142), toward rival schools.

Of the students of the grammar school, the regular clerical students for whom the school was primarily established, the 'scolares canonici,' held prebends, which paid their expenses. Along with these 'scolares canonici,' who were frequently of noble birth, some lay pupils of equal rank were received. Alcuin specifically refers to the students at York before his time as being sons of the nobility, some of whom pursued ecclesiastical while others pursued secular studies. The latter paid fees which in some instances were considerable.

4. *Support of Poor Students.*—But in both schools there were frequently numerous poor students in addition to those members of the song school who supported themselves by acting as choristers. For the support of these, various means were devised some of which are still employed. Some churches had large endowments for the support of poor students. The cathedral school at Bamberg, for instance, attracted many students because of the numerous medieval scholarships and fellowships it was able to bestow. Bequests for the support of poor students at various schools were so frequent that it is not necessary to cite examples. Even the cities through which the wandering students passed had arrangements of various sorts for affording them food and lodging. In some there were regular endowments

for this purpose. Some pupils received aid in return for participation in chantry services. Others earned money by carrying holy water to the sick. At Winchester a statute of the thirteenth century gave students the exclusive right to perform this service: "In churches which are near the schools of the city of Winchester . . . the holy water is to be given to be carried only by their scholars." Students received money also for special services on festival occasions. Some maintained themselves by begging.

These special privileges enjoyed by students naturally attracted to their ranks many of the idle and the unworthy. So numerous did they become that in France they organized into a society, calling themselves Goliards after Goliath, their invisible head. The number of poor pupils received was in some institutions strictly limited. In St. Peter's in Basle it was prescribed in 1233 that only ten poor pupils were to be received. Unscrupulous parents sometimes availed themselves of these generous provisions in order to relieve themselves of the support of their children. In a school regulation of Worms in 1260 it is stated that "The children of poor people which are sent to school, in order that they might be supplied there with food, are not to be admitted to the A B C until they have paid at least 20 heller, and for the reason that only too often a crowd of such people had come to the school to whom the means of subsistence afforded by the school was a matter of greater importance than the learning."

The poor seem to have received separate instruc-

tion and seldom came into intimate relations with the 'scolares canonici,' or the aristocratic secular students.

Though the song and grammar schools were distinct institutions, this did not preclude the pupils of the latter from obtaining in the former their instruction in music, just as, on the other hand, it did not prevent the pupils of the song school from continuing their studies in the grammar school.

5. *Private Collegiate Establishments.*—Great dignitaries sometimes maintained a college of ecclesiastics in connection with their private chapels. And here as elsewhere the college maintained a grammar school. "Every great man," says Stubbs, "had a great house and household with his chapel or collegiate church at his capital house and his school of clerks as well as pages." The household college of chaplains of Archbishop Theobald satisfied to some extent the need that was afterwards met by the university system. Archbishop A'Becket had among his chaplains a staff of professors on a small scale: this one skilled in canon law, that one in historic precedent; one to whom they looked when an apposite quotation was wanted, another who had pretensions to be a philosopher. Much later in history we find the Earl of Northumberland employing his private college of priests in a variety of ways. On his household records they are listed as follows: "A priest to be dean of my lord's chapel, a priest to be surveyor of my lord's lands, another to be secretary, one to be almoner, a sub-dean to keep the choir, a riding chaplain, a chaplain to the eldest son, a clerk of the closet,

a master of grammar, a reader of the gospel, one to sing Our Lady's mass." In such households young noblemen and others often acquired the training requisite for a career as statesmen.

6. *The Scholasticus and the Clerical Control of the Schools.*—The fact that the cathedral grammar school was likewise open to the laity had important consequences for the future of elementary and secondary education. As the students flocked to the cathedral school in continually increasing numbers, the Scholasticus became a supervisor and appointed others as teachers, first in the cathedral, and then in the supplementary schools established elsewhere in the diocese. Thus, through growth of custom, the Scholasticus came to be recognized as the official in control of the schools and teachers within the limits of the jurisdiction of the cathedral chapter. He issued licenses to teach, the prototypes of the university diplomas of later times. The decree of the Lateran Council in 1179, already quoted, requires that the Scholastici "should have authority to superintend all the schoolmasters of the diocese and grant them licenses without which none should presume to teach." It is important to note here the development of that clerical control of the education of the laity which is still noticeable in England, Germany, and elsewhere. This assumed power of the Scholasticus, or Chancellor, was not, however, undisputed. In 1375 the Scholasticus of York cathedral complained that Mr. Nicholas, of Ferriby, without permission of the former, was keeping a grammar school within the

jurisdiction of the chapter "heedlessly and unjustly, to the gross prejudice and loss of the Scholasticus, and Mr. John, of York, Rector of Our Grammar School of York."

In Hamburg, Germany, in 1402, the Scholasticus claimed control of the four writing schools established by the city council. In the struggle that followed the council was laid under the ban of the Church, from which it was freed only by defraying the costs of the contest and abdicating all right of erecting its own writing schools. "Lübeck, in a struggle with the clergy over the same question, was laid under an interdict. [See p. 163.] In 1418 the city admitted the right of the Scholasticus to direct the schools, to appoint and dismiss teachers. Further it agreed to hand over to the Scholasticus one-third of the fees from the writing schools."

Canon VIII, of 1200, shows that some church officials were by that time making this right a source of income. It reads, "Let nothing be exacted for licenses to teach." The fashion set by some of the Scholastici of retaining the greater part of the emoluments of a position while delegating its duties to another seems to have spread, for Canon XVII reads, "We ordain that if schoolmasters hire out their schools to be governed by others, they must be liable to ecclesiastical punishment." The authoritative tone of the canon suggests to what degree clerical control had become established.

7. *The Precentor*.—The Precentor, like the Scholasticus, claimed absolute control of the teaching of

his particular subject within the cathedral district. In 1367, for instance, Mr. Adam, Precentor of the cathedral school of York, complained that "Whereas by immemorial custom the keeping school in the city of York for teaching boys singing, ought to be held in a certain place belonging to the cathedral church, . . . divers chaplains, holy water carriers, and many others actually keep song schools . . . in parish churches, houses, and other places in York to the no small prejudice and grievance of the Precentor." The Precentor, like the Scholasticus, usually handed over the actual work of teaching to a deputy. The Richard Craven referred to on p. 134 was engaged by the Precentor not only to board but also to teach the seven choristers.

(c) PARISH SCHOOLS

The need of trained assistants in conducting religious services, which in the cathedral and collegiate churches gave rise to the song schools, was felt also in the smaller churches and led to the establishment of parish schools. That the purpose of these schools was merely that of giving instruction in religion and in the music and ceremonial of the Church seems to be indicated in the following decretal of Gregory IX: "Let every priest who has a cure, have a clerk, who may sing with him and read the epistle and the lesson, and who is able to keep school [*scholas tenere*] and to admonish his parishioners that they send their sons to the church to learn the faith; and who may teach them with all chastity." A gloss adds "*Scolas: for*

teaching boys the psalter and singing." A thirteenth century statute of the diocese of Winchester urges upon the clergy the duty of maintaining these schools: "Let Rectors, Vicars, and Parish Priests see that the boys of their parishioners know the Lord's Prayer, the Creed, and the Salutation of the Virgin, and to sign themselves rightly with the sign of the cross; and the parents of the boys should be induced to let their boys, after they know how to read the Psalter, learn singing also; lest by chance after they have learnt higher subjects they should be obliged to go back to this, or, being ignorant of it, should be always less fit for divine service." Where conditions were favorable and the need was felt, the course of study of the parish school was expanded so as to afford more or less of a general education. An example of this is found in a parish school in Breslau in the thirteenth century. On the petition of the Dean and Chapter of Breslau, the Papal Legate, Guido, in 1257 appoints "that there may be within the walls of the city of Breslau near the church of St. Mary Magdalen a school in which little boys may be taught the alphabet, the Lord's Prayer, and the Salutation of the Virgin with the Creed, Psalter and seven psalms; they may learn there also in the same schools Donatus, Cato, and Theodulus and the Rules for Boys [*regulas pueriles*]. If the boys wish to learn more advanced books, they must transfer to the schools of St. John in the castle or wherever they wish." The above examples suffice to show what is confirmed by the further data we possess regarding the parish schools,

namely, that in aim and character of their work it is impossible to draw a definite line of distinction between them and the schools of the cathedral and collegiate churches. Like the latter the parish schools were primarily established in part to supply the need for trained leaders and assistants or participants in the services of the Church, and in part to afford systematic religious instruction. The ends to be accomplished in all three schools were essentially the same, and in attaining them a longer or shorter stretch of the same curriculum was followed.

As to the frequency with which schools were maintained in connection with parish churches during the Middle Ages opinions differ. Quite a number of the Roman Catholic writers such as Janssen, Drane, and Brother Azarias believe that a relatively large proportion of the people received a general education in the Middle Ages through the agency of the parish school.

The arguments against this view are summed up in Sander, 'Geschichte der Volksschule,' and in Schmid, 'Geschichte der Erziehung' (pp. 10-24).

These schools seem to have varied widely as to the amount of instruction which they afforded. The exhortations to the priests on this matter, such as those just quoted, suggest that in the smaller parishes there were frequently no schools at all, and that even where they existed the work was often restricted to training the young to intelligent participation in church services and religious doctrine. That in many instances little beyond this was attempted is no reproach to the

Church. Before the invention of printing, books were rare and expensive. Ability to read was of little consequence to the poorer classes of the laity for the simple reason that there was practically nothing for them to read.

Book learning remained largely a peculiar possession of the clergy. "You laymen," said Berthold of Regensburg, the great preacher of the thirteenth century, "cannot read as we parsons can." The vigorous growth throughout Europe in the thirteenth and fourteenth centuries of literature in the vernacular, indicates, however, that ability to read was becoming more common.

The decretal of Gregory IX quoted above shows that the instruction was given by the parish priest or his assistant.

CHAPTER VIII

CLASSIFICATION OF SCHOOLS AS TO METHOD OF MAINTENANCE

BUT if the parish priest or his assistant did not usually conduct a school as a part of his regular duties, the growing educational needs of the time were met by the establishment of schools more or less closely attached to the Church. These schools, whether petty schools or Latin schools, possessed nothing distinctive as regards course of study, and may best be classified according to the means by which they were maintained.

The form which these educational institutions took was determined largely by the religious beliefs of the time and particularly by the belief in purgatory. It was held that one's sins condemned him not always to everlasting punishment but frequently to long periods of expiatory and purifying suffering in purgatory. It was believed further that this period could be shortened through the saying of masses. This is one of the reasons for the numerous and munificent endowments of monasteries and collegiate churches in the Middle Ages. They were great religious institutions, one of the purposes of the endowment of which was that of securing the welfare of the souls of their founders.

1. *Chantry Schools*.—But there were comparatively few, even among the nobility, who could afford to endow monasteries. Hence, instead of establishing a whole community of monks or priests, a man would bequeath property, the income from which would support one or two priests to chant at stated intervals masses for his soul. Such an institution was a chantry. As the chantry priest had usually much spare time on his hands, he, sometimes at the request of the founder, sometimes on his own initiative, taught school. Hence a class of chantry schools. The post of chantry priest was apparently one of ease and comparative independence, at any rate one of the merits of Chaucer's faithful parson was that

“ He settē not his benefice to hyre
 And leet his scheep encombred in the myre
 And ran to Londone, unto seyntē Poules
 To seeken him a chaunterie for soules
 Or with a bretherhede to ben withholde.”

Archbishop Islip complains of the clergy “That they wholly refuse as parish priests to serve in churches or chapels—though fitting salaries are offered them—that they may live in a leisurely manner, by celebrating annals for the quick and the dead.”

The manner in which school-work was connected with the chantries can best be shown by an example. An extract from the will of Sir Edmund Shaa or Shaw reads as follows: “And I woll, that the other honest Priest” (the first being appointed to preach at Woodhead Chapel) “be a discreet man and con-

ning in Gramer, and be able of connying to teche Gramer. And I woll that he sing his Masse, and say his other divyne Service . . . at souch an aulter there as can be thought convenient for hym, and to pray specially for my Soule, and the souls," etc. (enumerating certain others). . . .

"And I woll that the same connying Priest keep a Gramer school continually in the said Town of Stopforde, as long as he shall contyneue there in the said service. And that he frely, without any wages or salarye . . . except only my salarye . . . shal teche al maner person's children, and other that will come to him to lerne."

2. *Guild Schools*.—But what was to become of the souls of those who had not the means to endow even chantries? Must they endure long ages of suffering for lack of prayers and masses? To avoid this it became quite common practice among the middle and lower classes in this age of unions or corporations to form religious guilds, one purpose of which was to secure the saying of masses for the souls of the deceased members. Each guild had its own priest who, sometimes, in addition to attending to the religious necessities of his patrons, taught their children in school. The same thing was done occasionally by the merchant or craft guilds established primarily for the organization and protection of commercial and industrial activities respectively. Hence a class of guild schools.

Sometimes the great merchant or trade guilds acted as trust companies managing the funds of an endowed

school or chantry, or seeing to it that the wishes of the founders were carried out. John Colet, for instance, conveyed the whole of his estate in London to the Mercers' Company in trust for the endowment of his school at St. Paul's. A free grammar school was founded at Holt, date unknown, by Sir John Gresham, Alderman of London. The statutes provided that the master and usher were to be nominated by the Fishmongers' Company, to whom he left the patronage and government of the school.

The religious and other guilds were, we should mention in passing, the charitable associations, the benefit and insurance societies of their times.

3. *Stipendiary Schools*.—Property was sometimes left to endow a priest to assist in the services of a church or to say mass in honor of some favorite saint, frequently the Virgin Mary. Those holding such positions were known as stipendiary priests. Like the chantry priests they, sometimes on their own initiative or again in conformity with the wishes of the founder, taught school. For example, in the chantry certificate reports concerning Alton we find, "A stipendiary priest. Founded by one John Chawflower to have continuance forever to the intent to assist ministration in the church of Alton and to teach the children grammar."

4. *Morrow Mass Schools*.—Another of the great variety of ways in which schools sprouted out from the ancient and complex organization of the Church is illustrated in the case of Pountfrett. Here there was an endowment for a morrow mass priest, that is,

a priest who was to say mass early in the morning so that laborers going to work could attend. Among the other duties of this priest were those of surveying the mending of highways and of teaching a grammar school. Commenting on this Leach says, "Having got up so early the priest did other odd jobs such as acting as highway surveyor, while he not unfrequently eked out his time by teaching the early-rising schoolboy, and so not a few grammar schools owe their origin to the morrow mass."

5. *Hospital Schools*.—Many schools originated in connection with hospitals, that is, almshouses. For example, we find concerning the grammar school at Huntingdon, that "The endowment now forms part of the revenue of the master and co-frater of the Hospital of St. John, founded—in the reign of Henry II—for the relief of the poor people and the keeping of a free grammar school at the cost and charge of the master of said house." The almshouse and grammar school at Ewelme were founded by the Duke of Suffolk and his wife Alice, the granddaughter of the poet Chaucer, in the reign of Henry VI for "two prestes and thirteen pore men"—the second priest to be "a wele disposed man apte and able to teaching of gramer to whose office it shall long and pertain diligently to teache and inform childer in the facultie of gramer—without exaccion of any Scole-hire."

The Extracts from the Chantry Certificates selected by Leach and the numerous records referred to by Specht, show how extensive both in England

and on the continent were the provisions for school education in connection with these various religious foundations.

To this setting apart of landed and other property for securing the welfare of the souls of the dead a limit would sooner or later have to be set as the number of generations to be thus provided for increased. In both England and Germany the coming of this crisis was hastened by a change of religious belief, the Reformation. The secularization of the property of these religious foundations is one of the most momentous events in the history of the schools in the period of the Reformation, and will be discussed later under that head.

CHAPTER IX

THE BEGINNINGS OF LAY EDUCATIONAL INSTITUTIONS

INFLUENCE OF THE TWELFTH CENTURY RENAISSANCE UPON THE EDUCATIONAL LIFE OF THE MIDDLE AGES

THE twelfth and thirteenth centuries are characterized by great progress in almost all phases of human activity. This vigorous onward movement not only produced marked changes in the work of the schools already existing but it opened the way for the development of systems of non-religious, non-professional instruction outside the pale of the Church. Signs of reappearance of systems of lay instruction are to be noted earliest among the noble and gentle classes.

Chivalrous Education.—One result of the lack of any permanent, powerful centralized government in Western Europe after the decay of the Roman empire, was that men were led to depend more upon isolation, upon military prowess, and upon fortified strongholds as means of securing life, liberty, and possessions. The weaker purchased security through the sacrifice of their independence to the strong. Thus developed the feudal system. The lord and his dependents dwelt upon the manor, which in the dark-

est ages was practically an independent economic unit.

Previous to the invention of gunpowder the lord of the manor not only possessed in his castle a powerful means of defense in case of attack, but with his horse and his armor he was the man most formidable in battle. The horseman or knight thus becomes a prominent figure in early medieval society. The romantic, adventurous, religious, and altruistic enterprises of the Crusades brought this class into still greater prominence and led to the gradual evolution of an ideal of knightly character which found embodiment in numberless noble and picturesque forms in art and literature. In this way this ideal was made definite and permanent, so much so that it is vivid in the popular imagination even of to-day.

With the advance of civilization and the widening of social intercourse, social standards of knightly accomplishments became so high as to necessitate something approaching systematic instruction or school-work. So definite were these standards and so widely acknowledged during the twelfth, thirteenth, and fourteenth centuries that this period may rightly be called 'The Age of Chivalry.' The characteristics of the ideal knight were, as we should expect considering his relation to the rest of society, largely physical and, though in part esthetic and even literary, were by no means bookish. The knight's estimate of mere book learning is expressed in an old Scottish ballad:

“ We thynk thame verray natural fulis
 That learnis our meikle at the sculis
 Schir, ye mon leir to ryn and speir,
 And gyde you lyke ane man of weir.”

The development of chivalrous education was furthered by the curious custom of fostering, by which children of a nobleman were sent to be brought up in the house of another, usually more powerful and eminent, noble. Thus we read in the biography of a medieval knight, “ When the child was seven years old they sent it to Joce de Dynanin at Ludlow Castle to teach and nourish; for Joce was a knight of good accomplishment. Joce received him with great honor and affection and educated him in his chambers with his own children.” Fulke, the younger, in the next generation, was taken by King Henry II as his foster-child and was nourished and educated with the young princes, of whom John proved a bad foster-brother. The great barons sought to form alliances of this kind with the king as with his great ministers and other men of power.

The purpose of this education, during the period when the ideals and customs of chivalry prevailed among the upper classes, was the development of the well-known traits of a knightly character: prowess in battle, physical strength and skill, courtesy, grace of manner, courage, honor, generosity, magnanimity. To these were added pleasing social accomplishments such as skill in composing and singing songs, in dancing, etc.

The duties of the ‘ Maistyr of Henxmen ’ (“ young

gentylmen, Henxmen,—VI Enfautes, or more, as it shall please the Kinge”) to his pupils at the court of Edward IV are stated as follows, “To shew the schooles of urbanitie and nourture of England, to lerne them to ryde clenely and surely; to drawe them also to justes; to lerne them were theyre harneys; to have all curtesy in wordes, dedes, and degrees; diligently to kepe them in the rules of goynges and sittings, after they be of honour. Moreover to teche them sondry languages, and othyr lerninges vertuous, to harping, to pype, sing, dance; and with other honest behaviour and patience.”

Perhaps the best account of the results of a complete chivalrous education that we have is found in Chaucer’s description of the squire:

“Wel cowde he sitte on hors, and fairë ryde.
He cowde songes make and wel endite,
Juste and eek daunce, and wel purtreye and write—
Curteys he was, lowly and servysable
And carf byforn his fader at the table.”

Great emphasis was laid upon manners. This feature of the education of the upper and middle classes is reflected in Chaucer’s description of the knight, the squire, and the nun. The knight

“lovede chivalrie,
Trouthe and honour, fredome and curteisye.”

The same was true of the nun.

“In curteisye was set full muche hire leste.”

The ballad literature in numerous passages gives evidence of this tendency in the education of the time.

“It was the worthy Lord of Leaven,
he was a lord of high degree,
he had noe more children but just one sonne,
he sett him to schoole to learne curtesie.”

This feature of the aristocratic education seems to have been taken over into the developing middle class education, and gave rise to a curiously large number of popular books on manners and etiquette. As we have seen, great attention was paid to manners in monastic and church schools of the time (see p. 132). Books on deportment were used as texts (e.g. the ‘Rules for Boys’ mentioned on p. 143). This fashion survived to become a feature even of colonial education in America. Christopher Dock, the eminent teacher among the German colonists of Pennsylvania, drew up ‘A Hundred Necessary Rules of Conduct for Children.’ The following extracts are representative of the contents of the entire class of books:

- “2. When you have left your bed turn back the covers.
- 5. Accustom yourself to dress quickly and at the same time neatly.
- 7. When you wash your face and hands do not splash the water about the room.
- 9. In combing your hair do not stand in the middle of the room but in a corner.
- 11. Do not eat your breakfast on the street or in school, but ask your parents to give it to you at home.
- 49. The bread that is left over, do not put into your pocket. Let it lie on the table.”

Winchester College, established in the fourteenth century, has as its motto "Manners makyth man."

From seven to fourteen the boy acted as a page, waiting upon the lords and ladies of the household. In the society of these he acquired some of the finer knightly accomplishments, habits of courtesy, distinction of manners. Such literary training as was felt to be requisite was obtained frequently under the instruction of the chaplain.

From the age of fourteen on, the youth was in attendance upon the knight, and received a training in the more manly exercises of the hunt, the joust, and in actual warfare. Upon the completion of this period the squire became a knight. Initiation into this degree was often accompanied by impressive religious rites.

EXTENSION OF THE MEANS OF EDUCATION AMONG THE MIDDLE AND LOWER CLASSES

The breaking up of the condition of industrial and commercial paralysis which prevailed in the early Middle Ages (see p. 152) was accelerated by the Crusades. The sight of strange lands, the contact with a variety of strange peoples, some of them highly civilized, acquaintance with the various ways of living, the customs and religious beliefs could not fail to so broaden the sympathies of the Western Europeans and their outlook on life as to work a momentous change in life and thought. Concomitant with this intellectual awakening and related to it, both

as cause and effect, was the restoration of order. The Northmen, the scourge of the preceding centuries, had become transformed into the Christian and civilized Normans. The wise and strong rule of the Ottos in Germany had done much to repress lawlessness and injustice.

The influence of these movements upon the aristocracy and the Church was a mixed one. The enormous expense of the expeditions impoverished the former, the failure of the enterprises affected the prestige of the Church. Upon the middle and lower classes, however, the influence of these great movements was beneficial. Not only the serfs who returned from a crusade, but many of those who remained became freemen. The bustle and stir of the times, the more abundant and wide-reaching intercourse among peoples broke up the isolation of manorial life and accelerated the development of the industries and commerce.

The intercourse of the people of the East and the West greatly increased among the latter the knowledge of and taste for a variety of commodities which, at first luxuries, soon came to be looked upon as the necessities of life. These included not only important natural products such as rice, Indian wheat, sugarcane, plums, apricots, lemons, watermelons; but manufactured articles, muslin, satin, damask, fine leather, rugs, tapestries, pottery, and important inventions such as the windmill. Not only did the Crusaders create a demand for these things but they developed that skill in navigation and that knowledge

of trade routes which made it possible to satisfy it. The result was a period of great commercial activity. Parallel with this development of commercial activity and springing from like causes, was a vigorous growth of the industries. The growth of civilization increased the demand for manufactured articles, and an increasing proportion of the population from being mere general agricultural laborers became skilled workmen.

The conditions both of industry and of commerce led to the grouping of those engaged in them in towns or cities. In accordance with the necessities and customs of the times the owners of land in these cities formed a union or guild, the citizen or merchant guild for the greater security of life and property and the better regulation of city life. Through these they acquired a considerable measure of political freedom.

City Grammar Schools.—The significant point in all this is the coming to the front in the society of Western Europe of another class, the so-called burgher or citizen class which from now on is to take, on the whole, an increasing share in the direction of human affairs. The increasing wealth and leisure of this class created a corresponding demand for a liberal education. The cathedral and collegiate schools not being sufficiently numerous to meet this demand, other schools were established at points within the city or diocese convenient for their patrons. Though maintained by the municipality or by private endowment these schools were usually considered as an-

nexes of the central cathedral and college schools, and hence under the control of the Scholasticus. In numerous instances, however, this authority was acknowledged only after a determined struggle. In 1508 "the Provost and the Burgesses of Glasgow objected to the presentee of the Chancellor of the diocese, and claimed that the right of presentation to the Grammar School belonged to themselves. They did not succeed in their claim." In Aberdeen the quarrel, after lasting nearly half a century, was decided in favor of the town. In Hamburg the struggle over the same question lasted nine years.

In these city Latin grammar schools sometimes only the more elementary stages of the conventional course of study were taught. Their subordinate relation to the cathedral school was shown in that, on festival occasions, all the pupils assembled within the walls of the latter. Not only were these outlying schools under clerical control but their teachers were members of the clergy. Nevertheless, in this merely local separation of the school from the church grounds we may trace perhaps the faintest beginnings of lay school instruction. From the middle of the thirteenth century on, even the smallest cities had schools in which children destined for lay careers could obtain an elementary education.

The Rise of the Folk-School.—While the Latin grammar schools were thus beginning to break away from this intimate association with the Church, the germs of the great modern folk-school were slowly assuming definite form among the mass of the people

in the larger centers of population. For the folk-school, though in various features of its organization and its methods it continued the traditions of the higher and older schools of the clerical and of the upper classes, was essentially an outgrowth not of the Church or of the state, but of the thriving industrial and commercial life amidst the rank and file of the people. There were elementary schools connected with the churches and the monasteries, but they were designed primarily to prepare for the grammar school or for participation in church services rather than to meet the educational requirements of the everyday life of the ordinary citizen. The folk-schools greatly increased in number after the invention of printing. They were the result of the systematization of the activities of the hitherto unlettered classes in learning and teaching the fundamental arts of reading, writing, and calculation. They were originally private enterprises, and the great majority of them remained so. Their character, determined as it was solely by local conditions, was extremely varied. This is indicated by the great number of different names by which they are known. They ranged from the dame, petty, hedge, and girls' (Maidlin) schools to the semi-professional writing and reckoning schools which seem to correspond to the business schools and colleges of to-day. These will be discussed in another paragraph. Under favorable conditions the work in some instances became so advanced as to encroach upon that of the grammar school. It was found necessary in Edin-

burgh in 1519 to restrict the course of study in the folk-schools to "grace-buik, prymar, and plane donatt." These schools of the vernacular were distinguished further through the fact that they were frequently conducted by women. Hence the name 'Dame School.' The story of the school in the Reformation and subsequent periods centers about the gradual rise of these folk-schools into great state institutions.

Writing and Reckoning Schools.—The vigorous development of commerce created a much greater demand than formerly for instruction in writing and arithmetic. Provision for this need was made occasionally even in the ecclesiastical schools. For instance, in the statutes of the Rothertham College school the following passage occurs: "As that land sends forth many youths endowed with bright and acute minds who do not all wish to attain the high dignity of the priesthood, that they may be better fitted for the mechanical arts and other worldly concerns, we have established a third fellow skilled in the art of writing and in the science of arithmetic." Again at Acaster in 1483 there were schools connected with the church, "Three divers masters and informators in the faculties underwritten—one of them to teach grammar, another to teach music, and the third to teach to write and all such things as belong to the scrivener's craft." But more frequently this instruction seems to have been acquired privately, or in lay writing or reckoning schools taught often by professional scriveners or accountants. In some in-

stances these schools were maintained by the municipality. In Germany in 1262 the city council of Lübeck had wrung from the clergy permission to establish four writing schools wherein only German, reading, and writing were to be taught ("dar men allen schal lernen kinderen lesen unde scryven in dem dudeschen unde anderes nerghen ane").

Private Tutors.—In wealthy and aristocratic families private tutors were employed in the elementary instruction of the children. Reference to tutors is made in 1410 in the decision on the famous Gloucester case. It reads, "If a man retain a master in his house to teach his children he damages the common master of the town, yet I believe that he has no action."

The Status of the Teacher.—The heads of the grammar and song schools held, as already noted, positions of great dignity and influence, but they soon came to be school directors rather than members of the teaching profession.

Previous to the Reformation the teachers in the various classes of grammar schools were, as a rule, clergymen. The clerical and teaching professions were not definitely separated until about the time of the Reformation. Indeed grammar-school work in England is still, to a considerable degree, carried on by clergymen.

The medieval grammar-school master was frequently distinguished by his learning from his fellow-priests. As the title 'Magister or Master' indicates, they were sometimes graduates of universities.

Those who had not attained the above degree had the title 'Sir,' now peculiar to knights and baronets.

"The pure priest thinkis he gets nae richt
Be he nocht stylit like an Knycht
And callit 'Schir' before his name
As Schir Thomas and Schir Williame."

The rectors of the city grammar schools, particularly on the continent, depended mainly upon fees for support, the city providing only the building or at most a small part of the rector's income. If assistants were needed the rector had to engage and pay them himself. Teachers frequently eked out their meager income by serving as city clerks,¹ choristers, ushers. Sometimes they engaged in business in a small way. Little regard was paid to the character of the teacher. They were sometimes expelled monks, dissipated students, or mere adventurers. The teachers in folk-schools were often vagabond students or manual laborers with a meager knowledge of the three R's, who supplemented their regular work by keeping a school, often in their workshop. Erasmus complains that, "No one is so abandoned, so useless, so insignificant that the common people do not consider him fit to conduct a school."

Judicial Confirmation in England of the Right to Teach.—The schools of the Pre-Reformation period are distinguished from those of later times in the completeness of their subjection to clerical control.

¹ Cf. Shakespeare, 'King Henry Sixth,' Pt. 2, Act 4, Sc. 2, ll. 78-82.

"Whether," says Parmentier, "the schools were created by religious orders, by the secular clergy, by the kings, or the guilds, their organization was about the same. They were all equally under the supervision and direction of the Church, which alone furnished the masters for them."

Instances of rebellion against the authority of the clergy in school matters have already been noted. The famous Gloucester School Case led, in 1410, to a declaration from the English bench of the right to teach as a doctrine of the common law. Two masters who had been appointed to the Gloucester Grammar School by the Prior of a neighboring monastery brought an action of trespass against a master who had ventured to teach another school in the same town. In the decision it was stated that the defendant had committed no offense against the common law of England, that "To teach youth is a virtuous and charitable thing to do, helpful to the people, for which he cannot be punished by our law."

The Craft Guilds as Educational Institutions.—The rise in the social scale of those engaged in manual labor meant an increased demand from this class also for general culture. For, as was the case with the artizans described by Chaucer (Prol., v. 473), "catel hadde they ynough and rente."

This general culture was acquired not only in the schools already described, but some measure of it at least seems to have been acquired along with the technical education afforded in the craft guilds. Because of this and because these guilds seem to have

been the models for certain features of the organization of universities, they deserve some attention here.

It is significant that the Latin name of these corporations is 'scholae,' i.e. schools, and that the regular members were known as 'magistri,' i.e. teachers.

Throughout the darkest period of the Middle Ages the traditions of skilled handiwork were preserved largely in the great monasteries such as Fulda, Reichenau, Corvey, St. Gall. The English monk Dunstan, in the tenth century, was so enthusiastic and skilful a worker in iron that he figures in folk-lore as one who had mysterious dealings with the supernatural powers. As Archbishop of Canterbury he directed the priests to instruct the youth in trades.

Among the arts thus cultivated in the monasteries was that of ecclesiastical architecture, an art brought later by medieval artizans to the highest degree of excellence. Many of the leaders in the monastic world were enthusiastic architects. Ratgar, one of the early abbots of Fulda, employed his monks so vigorously in building that they appealed to the Emperor for relief.

During the eleventh and twelfth centuries the monks found themselves unable to cope with the demands for the erection of churches and monastic buildings. Hence they were forced to call in the aid of laymen. Where a building required several years for its construction these workmen were organized into a lay brotherhood collateral with that of the monks. New members were instructed in the technique of the art. Later when the interest of

bishops and abbots in building enterprises waned, the lay master builders separated themselves from the monasteries in which they had been educated and undertook independently great building contracts. This occurred at a time when the cities were rising to a position of proud and conscious independence. Citizens, as formerly kings and bishops, took pride in adorning their city with magnificent buildings. National, religious, and individual yearnings and aspirations of this period of progress found expression in a new style of architecture, the Gothic.

The vastness and the multiplicity of artistic detail in the great Gothic cathedrals taxed the powers of the lay builders to the utmost. The large number of masters and apprentices employed on these structures organized into guilds, in which the knowledge and skill requisite to the practice of the trade was handed down from master to apprentice. The elaborate ornamentation of the Gothic architecture, the mechanical difficulties to overcome, must have necessitated a study of design, of mechanics, and of geometry of high cultural value. Similar in its influence was that pride in workmanship which seems to have been fostered under the guild system. The workmen were divided into three classes: the apprentices, who were learning the trade; the fellow, fellowcraft, or journeyman, who had learned all that the master could teach him, but who still worked with him; and the master, who practised the trade as an independent workman and who gave instruction to apprentices and fellows.

RÉSUMÉ AND CONCLUSION ON MEDIEVAL SCHOOLS AND
SCHOOL-WORK

Owing to the dominance of barbarian races and the instability of the political foundations of society preceding and during the Middle Ages, the energies of men were employed more and more exclusively in the bare maintenance of existence, and civilization and culture rapidly declined. The non-professional schools in which this culture was cherished and perpetuated ceased to exist throughout the greater part of Western Europe. The clergy of the Christian Church had risen to a position of religious, moral, and intellectual leadership and more or less of the culture of the Roman schools, which had assumed a definite, fixed form as the seven liberal arts, was found to be indispensable in their professional training.

This training was afforded in schools connected with the monasteries and with the cathedral, collegiate, and later even the larger of the ordinary parish churches. The work of these schools varied greatly from place to place and from time to time. In some only the bare essentials of the elementary course were taught. In the great schools the entire course, including the subjects of the quadrivium, was given.

As society gradually regained stability of organization and laymen began again to feel the need of systematic instruction in more or less of the liberal arts, they obtained it in these church schools. The growing demand of the lay classes for liberal education

was met by the establishment of schools in connection with the various religious foundations which, as regards means of maintenance and external connection, may be roughly classified into chantry, stipendiary, guild, morrow-mass, and hospital schools.

The fact that practically all the learning of the time was preserved in the Latin language made Latin grammar the main subject of study. As to content of course of study, the church schools may be divided into grammar and song schools. The latter, designed primarily to train choristers and assistants in the church services, gradually assumed in the great as well as in some of the small churches the character of elementary schools, teaching reading and writing and other subjects fundamental to the work of the grammar school.

The faint beginnings of the secularization of the schools may be found in the formation in larger centers of population of annexes to the church or monastic schools, which were maintained more or less by the city and are known as the burg or city grammar schools.

As a result of the development of commerce and industry the wealthy citizen or burgher class rose to a position of power and influence side by side with the nobility and the clergy. The busy life of the medieval centers of commerce and industry gave rise to educational needs of a more immediate and practical character than those met by the traditional course of study of the grammar schools. The systematization of the efforts made to satisfy these needs

brought into existence a number of schools which have been imperfectly classified as writing, reckoning, and folk-schools.

The grammar school may be said to survive in part in the high school of to-day. The common public school of to-day, inasmuch as it prepares for the high school, may be considered as the descendant of the medieval elementary or song school; inasmuch as it meets the more essential of the educational needs of the mass of people, it is the modern representative of the reading, writing, reckoning, and other folk-schools which originated in the Middle Ages.

The conditions of the early medieval period being unfavorable to creative work in literature or science, the traditional course in the seven liberal arts was the more closely adhered to and school procedure became to a high degree formal. Yet among the teachers of this long period were many able and even brilliant men, and in the work of the best schools the principles of the inductive method, of apperception, and of correlation seem to have been more frequently observed than is generally believed.

CHAPTER X

THE RISE OF THE UNIVERSITIES AND THE RELATED INTEL- LECTUAL MOVEMENTS

LOOKED at in the large, progress in the arts of civilization is seen to have been continuous from the close of the period of the Crusades to the present. This continuity has not, however, been that of a steadily advancing stream, but that of an incoming tide, each successive and apparently triumphant wave gradually coming to a standstill and even receding, yet each, after all, contributing its quota to the rising flood.

The causes already noted (see pp. 157-159) which contributed so much in the twelfth century to the development of skilled craftsmanship and commercial enterprise and to the appreciation of refinement of manners, literature, and the fine arts among the upper and the new middle class, had a no less marked influence upon the intellectual life of the time. This manifested itself especially in the increased attention to the study of medicine, law, and theology.

The Study of Medicine.—During the eleventh century the medical scholars at Salerno became noted for their more thorough knowledge of the writings

of Galen, Hippocrates, and other ancient authorities on medicine. For more than two centuries Salerno was as famous a center for the study of medicine as was Bologna for the study of law. Inasmuch, however, as the school in the former did not develop a university organization and exercised little direct influence upon the form of subsequent professional schools no attempt will be made to set forth the little that is known of its character and organization.

The Study of Law.—The rapid growth of commerce and the increasing complexity of society created a need for a more thorough and comprehensive knowledge of law just at a time when the disputes of certain Italian cities with the Emperor were leading the former to a more painstaking study of the great system of laws created by the genius of the ancient Romans and codified under Justinian.

THE STUDY OF THEOLOGY. THE SCHOLASTIC MOVEMENT

But a subject of wider and more intense interest was that of theology. Already throughout two or three centuries certain great thinkers, such as Scotus Erigena, Lanfranc, and Anselm, had been engaged in a more or less complete rationalization of the doctrines of the Western Church. Contact during the period of the Crusades with the conflicting doctrines of the Mohammedans and with those of the various Christian sects in the East greatly stimulated this activity. But, aside from these incentives, increasing political stability and private wealth were affording

security and leisure for reflection, and it was but natural that the ever active human intellect thus emancipated should wreak itself upon the subject in which the learning of the time culminated.

The doctrines of the Christian Church had not yet been systematized. Their acceptance had rested hitherto solely upon the unquestioning faith of the believer in the divine authority of the Church. The intellectual awakening of the period rendering this foundation less satisfactory, the leading thinkers of the time sought to ground the doctrines of the Christian religion firmly in the reason. Naturally the first to realize this need and to take an active part in gratifying it were the 'scholastics,' the teachers, hence the name 'scholasticism,' by which the movement is still known.

As these became more and more engrossed in the work of demonstrating to the reason the truth of the doctrines of Christianity and in the formulation of these and their arrangement into a logical and consistent whole, they were more and more impelled to apply the work of the Greek philosophers, especially Plato and Aristotle. Let us note a typical instance of this. In Porphyry's 'Isagoge,' an introduction to Aristotle's philosophy in every medieval student's hands, the doctrine of ideas over which Plato and Aristotle differed (see p. 23) is touched upon as follows: "Next, concerning genera and species, the question, indeed, whether they have substantial existence, or whether they consist in bare intellectual concepts only, or whether, if they have

substantial existence, they are corporeal or incorporeal, and whether they are separable from the sensible properties of things (or particulars of sense), or are only in those properties and subsisting about them, I shall forbear to determine. For a question of this kind is a very deep one and one that requires a longer investigation." The urgency of the great task the scholastics had undertaken forced them, however, to take sides on the question.

Those maintaining that genera or species have substantial existence were Realists. The Nominalists held that only the individual possessed true reality. Applying their views, for example, to the doctrine of the Trinity, the Realists maintained that God was a subsistent reality, the Nominalists, that the term represented only a generalization in thought from the three divine persons.

The Origin of the Universities.—The demand for instruction resulting from this great access of interest in the subjects of theology and law resulted ultimately in bringing into existence a distinct and higher class of institutions of learning, later called universities. That the causes working to this end were not merely local but general is evidenced by the fact that this new institution assumed definite form in the same century (the twelfth) in centers of population so widely separated as Paris and Bologna. Between the two great prototypes of the modern university originating thus simultaneously north and south of the Alps there were, however, striking differences. While the dominant interest in Paris was, at first,

theology, in Bologna it was law. In Paris the university was an outcome of the scholastic movement, which had its chief center among the clergy in and about the cathedral school of Notre Dame. In Bologna, on the other hand, the movement originated among laymen connected with a school of the liberal arts, which was a survival of the old Roman schools of grammar and rhetoric. (See p. 89.) A school which, like the above, attracted students from a distance was known at first as a 'studium generale' to distinguish it from a local school, a 'studium particulare.'

Organization.—The foreigners in attendance at these 'studia generalia' did what the people of the Middle Ages in such circumstances had always been accustomed to do. They formed voluntary associations (guilds, corporations, 'universitates') for the purpose of protection and of the regulation of conduct; for the foreigner in those times, and particularly in the Italian cities, was little better than an outlaw.

It was only foreigners who needed the protection of these guilds or universities, hence at Bologna, where the teachers were native, both they and the Bolognese students were excluded. The number of these guilds or universities at Bologna varied, but about the middle of the thirteenth century they were reduced to two, the Cismontane and the Ultramontane. Within these larger corporations or universities were smaller groups composed of those from the same country; these were known as 'nations.'

Whether they or the universities were the organizations first formed is unknown.

As a result of attempts on the part of the Bolognese professors and citizens toward selfish aggrandizement, the students, many of whom were of mature age and were incumbents of important offices in church and state, rebelled. In the contest, the students, who by simply boycotting could deprive the Bolognese teachers and citizens of a great source of income, acquired external control of the law school. This they exercised through their elected head, the Rector, who could cite professors before him to answer for delinquencies.

At Paris, on the other hand, it was the guild or university of the teachers, and particularly of the Masters of Arts, which acquired control of the *studium generale* as a whole.

In both Paris and Bologna the teachers, following the medieval custom among those engaged in the same occupation, organized themselves into 'collegia' or guilds, the purpose of which, like that of all craft and professional guilds, was the maintenance of a standard of professional efficiency and the conservation of professional interests. The former end they accomplished through the conduct of examinations and the granting of degrees.

Degrees.—Following the custom of the craft guilds the scholar became a Master or Doctor only by demonstrating his fitness before and receiving the recognition of those who were already Masters or Doctors. The Doctors at Bologna being accused

of having bestowed some degrees unworthily, Pope Honorius III decreed in 1219 that no promotion to the doctorate should thereafter take place without the consent of the Archdeacon of Bologna. The latter's participation in the granting of degrees seems to have been, however, purely formal. At Paris, the Scholasticus or Chancellor of the cathedral school vigorously resisted the guild or university of Masters in any infringements of his exclusive right to grant licenses to teach. (See p. 140.) In this contest the university was supported by the Pope, and by the simple expedient of boycotting such of the Chancellor's licentiates as they wished, they retained control of the granting of degrees.

The course of study leading to the master's or doctor's degree gradually divided into two definite parts, the first in which the student devoted all his time to study, and a second, in which he both studied and assisted his master in teaching. Such an assistant was known as a 'bachelor,' a term common in the terminology of the guilds and of chivalry (see Chaucer, Prol. v. 80). In the thirteenth century the custom arose, possibly in a sportive fashion among the students themselves, of marking a pupil's entrance upon the bachelor stage with an exercise known as 'determinations,' in which the latter, after the fashion of a candidate qualifying for the degree of Master, maintained a thesis against one or more opponents. Later 'to determine' was made obligatory upon all taking the regular course. When still later examinations upon the books already read

were added, the Baccalaureate became a definite university degree.

The Faculties.—The higher professional schools of theology and law in Paris and Bologna respectively had developed about schools of the liberal arts. To these, schools of the remaining learned professions were added. From the separate organization of the teachers in each of these arose the faculties of art, theology, law, and medicine.

Changes in Relative Rank of Degrees and of Schools.—In both cities the courses in arts were attended by the younger students, and were considered as a preparation for the higher professional training. At first the titles Master, Doctor, and Professor were synonymous. In the fifteenth century, especially in England, custom restricted the title Doctor to the graduates of the professional schools, while the graduates in arts were known as Masters. In Germany the arts course was raised to the rank of the others by the addition to it of the subject of philosophy, hitherto a part of the theological course. Thus was formed the faculty of philosophy and hence the title Doctor of Philosophy.

As the faculties of theology at the university developed, the cathedral schools gradually lost their character as theological seminaries and sank to the position of secondary schools.

CHAPTER XI

THE RENAISSANCE

THE Middle Age went to such extremes in its absolute reliance upon authority and divine revelation, and in its preoccupation with the fate of the soul in the life to come, that it brought about a vigorous reaction in favor of individual freedom and of the cultivation of those natural human interests and capacities which had been so long neglected. Among the various similar movements that have occurred in the history of civilization, this of the fourteenth and fifteenth centuries stands marked as *the* Renaissance. The growth of commerce and industry, with the consequent increase of wealth and leisure, and the political stability resulting from the rise of the great modern European states, had long been laying the foundations for a new fashion of intellectual and emotional life.

The reason, hitherto submissive to religious authority and busied in rationalizing, elaborating, and systematizing its doctrines, now began to renounce its allegiance, and to attempt independently the solution of the great problems of life. More striking at first than this emancipation of the reason was that of natural and wholesome desires and impulses, hitherto unduly repressed under the domi-

nance of monastic ideals of life. Whereas the preceding age had concentrated its attention upon man's frailties and defects, he came now to be regarded with that delight and admiration which later found expression in Shakespeare's famous apostrophe:—"What a piece of work is man! how noble in reason! how infinite in faculty! in form and moving how express and admirable! in action how like an angel! in apprehension how like a god! the beauty of the world! the paragon of animals!" Similarly this world, hitherto regarded mainly as a vale of tears, or as merely a place of sojourn, was now seen to be replete with objects of interest and beauty. Of Battista Alberta, one of the representative men of this time, his biographer relates: "At the sight of noble trees and waving cornfields he shed tears; handsome and dignified old men he honored as a delight of nature, and could never look at them enough. Perfectly formed animals won his good-will as being specially favored by nature; and more than once when he was ill the sight of a beautiful landscape cured him." Finally, human life in this world came to have a new and intense significance. It was recognized now as not merely a period of probation, or as merely an introduction to the life to come, but as consisting of experiences of value for their own sake.

The radically changed view of and attitude toward life created a hunger for a new culture in which these newly awakened secular interests might find gratification. This was found not only in the literature but in the philosophy, the art, and architecture of the

great Græco-Roman civilization, which for nearly a thousand years had suffered an eclipse under the dominating religious interests of the Middle Ages. The onset of the Renaissance, like that of all great movements, was gradual. Dante, thoroughly medieval, as the matter of his great poem shows him to be, in his outlook on life, was yet a herald of the new age in his enthusiastic admiration of the great Latin classics. "Art thou then," he cries rapturously to his guide, "that Virgil, and that fountain which pours abroad so rich a stream of speech? O glory and light of other poets! May the long zeal avail me, and the great love which made me search thy volume. Thou art my master and my author. Thou alone art he from whom I took the good style that hath done me honor." But the first to view life in its entirety from the Renaissance point of view was Petrarch. Even as a child he found delight in the rolling periods of Cicero's orations. As he grew up his enthusiasm and the charm and the force of his personality enabled him to lead many others to that vivid and sympathetic appreciation which he himself felt of the higher life of the Romans as recorded in their literature, their art, and their historical monuments.

What Petrarch and the other leaders of the movement aimed at was not merely the study of Græco-Roman culture, but the actual revival of the literary, artistic, and intellectual life of civilized Rome, so inauspiciously interrupted by the decline of the empire and by the consequent invasion of 'Gothic barbarism.' Early indications of interest in individual

human beings and in human experience are to be found in the tales of Petrarch's friend and kindred spirit, Boccaccio, and in the matchless portraitures of Chaucer's 'Prologue.' But this realization of the worth of human personality, this intense interest in human experience, this sense of the beauty of the human form, and of the intrinsic greatness of the human soul, found fullest expression in the arts of painting and sculpture. The crude, lifeless pictures of scriptural characters and events which for centuries had been placed upon the walls or over the altars of the churches to instruct worshipers, and inspire them in their devotions, became radiant and significant with the beauty, the intelligence, the feeling still preserved for us in such masterpieces as the Last Supper of Leonardo da Vinci or the Madonnas of Raphael. Art from being merely an aid to devotion became an interpreter of the beauty of the surrounding world.

The great Renaissance movement began naturally among the Italians. Not only had they profited most in the commercial and industrial activity resulting from the Crusades, but to them alone did the Renaissance possess the character of a revival of national traditions. Moreover, the progress of the movement was favored by the existence among them of numerous small independent republics or despotisms similar to those which played so important a part in the development of ancient Greek culture.

Humanism.—An important result of the Renaissance movement was the establishment of a new edu-

cational ideal. The qualities which the men of the Renaissance deemed most distinctively human and of highest worth, such as elegance and refinement of language and of manners, mental cultivation, liberal as distinguished from professional education, are all connoted in the term 'humanitas,' as used by Cicero. Hence 'humanitas' or 'humanity' came to designate the new educational ideal of the Renaissance. Later the word, humanity or humanities, came to mean not so much this peculiar quality of character as the studies believed to be peculiarly effective in cultivating it, namely, Latin and Greek language and literature. The educational doctrine which exalts this ideal or the importance of these subjects is known as Humanism.

INFLUENCE OF THE RENAISSANCE UPON SCHOOL-WORK

The cultivation of the esthetic interests which characterize the Renaissance was possible only to the few, to the aristocracy of wealth or intellect. Among this class the movement resulted in a profound change in the school education of the young. The prevailing enthusiasm for the classical literatures gave these the first place in the course of study. The new feeling for the beauties of literary style, the political and social conditions of the times, combined with the teachings of the great Roman writer on education, Quintilian, to make eloquence one of the great ends of school-work. The revived appreciation of the dignity and worth of man, the new-found joy in life and in nature, resulted in greater

attention to physical training and deportment and to the study of history and the natural sciences. Of the schools established for the attainment of these ends in the different great households in Italy the most famous and the most successful was that under the direction of Vittorino da Feltre, connected with the court of the Gonzagas at Mantua. In a beautiful establishment specially planned and constructed for this purpose Vittorino set out to train the children of the court and others to share in and contribute to the life of this brilliant period of the Renaissance. The work centered about the Latin classics. These were taught not in the dry, formal manner hitherto prevalent in the schools, but with the insight and the contagious enthusiasm characteristic of the Renaissance. There was abundant practice in Latin and Greek composition. Training was afforded in music and declamation, mathematics, and the natural sciences. There was much physical exercise in the form of riding, swimming, fencing, and military evolutions. Manners and social accomplishments were carefully cultivated.

THE SPREAD OF THE RENAISSANCE MOVEMENT

Through the great Church councils which brought together from all lands the clergy, the most learned class, as well as by other means, the movement spread slowly throughout Western Europe. One of the first in Germany to be affected by it was Nicholas of Cusa, who was intimately associated with the Brethren of the Common Life, an organization

which played an important part in the history of elementary school education. Other pioneers of humanism in Germany were Rudolph Agricola, who furthered the movement more through the influence of his unique personality than through his activity as a teacher or writer; Reuchlin, who advocated the study not only of Latin and Greek but of Hebrew. Greatest of all among the scholars of Northern Europe was the genial Erasmus, eminent no less for his vast erudition than for his practical wisdom. Melanchthon, a kinsman of Reuchlin, was among the first of the German university students to turn to the Renaissance studies. His writings reveal the attitude of the leading thinkers toward the old and the new learning, as, for instance, in the following passage: "At the university nothing was placed before us but their babbling dialectics and meager physics. As I, however, had learned the art of versifying, I applied myself to the poets and likewise to history and mythology. I read, too, all the moderns of Politian's school whom I could lay my hands on, and this was not without its influence upon my style." This enthusiasm for literature and the fine arts was, however, a characteristic of the Renaissance scholars of Italy rather than of Germany. The latter were distinguished by the fact that they employed their knowledge of the new learning, as did Erasmus, mainly in the promotion of social and religious reforms.

CHAPTER XII

THE REFORMATION

THE recognition of the worth and dignity of the individual man which characterizes the Renaissance movement found expression in Northern Europe in a great religious movement, the Reformation. Though at first the two movements seemed to be parallel, it soon became evident that they were divergent.

The irritation and impatience which the Germans had long experienced under the dominance of the Italian heads of the Church found expression in the religious revolution headed by Martin Luther. The latter repudiated the doctrine of the mediatory powers of the Church or the priesthood. Salvation was conditioned upon the direct personal faith of the individual in God.

It was not only in this assertion of the importance and independence of the individual that the spirit of the Reformation harmonized with that of the Renaissance. They were alike in their higher estimation of the affairs of this life. Fuller recognition was paid by both to the worth of secular pursuits and to the dignity of the married state. Both were bitterly hostile to the scholastic philosophy and theology. The reasons for this hostility, it is important to notice,

were, however, quite different in the two cases. While the humanists were opposed to the scholastics on account of their abject submission to authority, their blindness to the worth and the beauty of human nature and human life, and the narrowness and futility of their intellectual activities, Luther and his disciples were hostile to them on account of the reverence they paid to the heathen Aristotle, and because of their attempts to harmonize faith and reason. Faith, the only means of salvation, was in Luther's opinion entirely independent of reason. The Roman Church, he charged, had secularized religion. It had substituted a rationalistic culture religion for the primitive Christian religion of sin and redemption.

EDUCATIONAL INFLUENCE OF THE RENAISSANCE AND THE REFORMATION IN NORTHERN EUROPE

In Germany and Northern Europe the Renaissance naturally made its way from the higher institutions downward. Its progress was manifest in the appointment of 'poets' and 'orators' to positions in university faculties, in the substitution of classical for medieval Latin, and in the establishment of Greek professorships. These changes did not take place, however, without a bitter contest with the adherents of the older scholastic learning. It was in this struggle that the latter were held up to ridicule in the famous 'Epistolae Obscurorum Virorum.' The new learning exerted an influence even in the secondary schools. Here again medieval Latin gave way to classical, the 'Doctrinale' of Alexander was

replaced by briefer and clearer text-books, the reading of classical authors was prescribed, and their works were used as models in poetical and prose composition.

But scarcely had these reforms been inaugurated in Germany when the outbreak of the Reformation threw school-work into confusion, for so intimately were the schools bound up with the Church that they shared in her downfall. The attention of the people was withdrawn from literary and esthetic pursuits to the great religious questions of the time. Following upon this period of religious excitement came the devastating Peasants' War. The attendance at the universities in Germany was reduced to one-fourth of what it formerly had been. For a time it seemed as if Erasmus's statement that "Where Lutheranism prevails the sciences and arts decline," was fully verified.

THE INFLUENCE OF THE REFORMATION UPON THE SCHOOLS

The movement for religious freedom and unconventionality headed by Luther naturally tended to run to extremes in various directions. By some religious enthusiasts Luther's emphasis upon faith as the sole means of salvation, and his assertion of its independence of reason, was exaggerated into absolute indifference or even into hostility toward learning. This movement was vigorously combated by Luther himself. He saw clearly that if the Scriptures are to be the sole guide in faith and doctrine a

knowledge of Hebrew, Greek, and Latin, the languages in which they have been transmitted, must ever be of first importance in the education at least of religious leaders. In his famous 'Letter to the Mayors and Councillors of all Cities in German Lands,' he writes: "For just as God would, through the apostles, send the Gospel into all lands, so He provided the tongues for this purpose. And had also previously through the Roman rule extended the Greek and Latin languages so widely throughout all lands in order that the Gospel might soon bear fruit far and wide. He has done so also now. No one has known why God has allowed the languages to come down to us until now we see for the first time that it is on account of the Gospel which He would afterwards reveal and through this expose and destroy the rule of Anti-Christ."

It was not only religious but political and other considerations that led Luther in the same letter to advocate school education for the rank and file of the people. "This is the best and richest increase, prosperity, and strength of a city," he continues further on, "that it should have many refined, learned, intelligent, honorable, well-bred citizens." Later in his 'Sermon that People should keep their Children at School,' he urges upon the authorities the duty of keeping talented youths at school, if necessary under compulsion and at public expense, in order to have men fit for holding public offices.

The importance of the Reformation in the history of school education is due chiefly, however, to the

influence of Luther's great friend and coadjutor, Philip Melanchthon. The grand-nephew of the humanist Reuchlin, and himself one of the greatest Renaissance scholars and teachers of his time, he struggled persistently and effectively to bring about a unification of the new evangelical doctrines with humanistic culture. A colleague of Luther's on the faculty of the University of Wittenberg, he worked to the attainment of this end not only as one of the most inspiring and widely influential teachers of his time, not only as the writer of the best text-books in a great variety of subjects, but as the man who through immediate personal activity or through written consultation either framed himself or assisted in the framing of nearly all the German Protestant university and school systems of his time. At his death thousands of his students were active in the universities and other schools throughout Germany. Two of them, Trotzendorf and Neander, attained especial eminence as educators. Not without reason was Melanchthon entitled the 'Præceptor Germaniæ.'

But this educational revival affected for the most part only the secondary Latin schools and the universities, and here it was seriously hindered by the narrow and dogmatic spirit engendered by the fierce theological controversies of the times. These not only made theology once again the central subject in the higher institutions of learning, but gave to the work of the lower schools a marked religious or rather theological character. In the lower schools also religion became the chief subject of the course of study,

and the catechism the most important of school texts. Throughout Protestant Germany the pastor or the sexton was on Sunday afternoons to explain to the congregation and to the younger people the principal passages of the Catechism. In 1530 Melancthon refers to this as a peculiarly Protestant institution everywhere cherished. The parents were expected to drill their children upon these lessons during the week. Since they were either unwilling or unable to do this the duty fell upon the shoulders of the sexton, who one day during the week gave instruction in the Catechism and in church music.

Notwithstanding Luther's exhortations, there was little or no extension of secular school education among the poorer classes. Various sorts of folk-schools existed in the cities, but they were private enterprises. Some beginnings toward the establishment of city and state systems of elementary schools are, however, to be noted. In the school ordinance for Brunswick, in 1528, for example, besides the Latin school, two German boys' schools were provided which were to teach the Catechism, good discipline and manners, writing and calculation. Reading is presupposed.

The establishment of state systems of folk-schools for both city and country was a more difficult problem. The first steps in this direction were taken in Würtemberg. In 1559 Duke Christopher decreed that German schools supported by the congregation should be established in all parishes where there were sextons. The sexton-teachers were to be examined

and approved by the church consistory as to their orthodoxy and their learning. The supervision of the schools was handed over to the pastor. A similar decree was made in Saxony in 1580. Tuition fees were the teacher's only source of income, and the positions were precarious, hence they fell largely into the hands of half-vagabond wandering students or ignorant workmen. Little attention was paid to the housing and equipment of the schools. The school-room was often at the same time a living-room and a workshop. Schools for girls as well as for boys were erected in some of the larger cities such as Brunswick, Leipzig, Strassburg. The times were, however, unfavorable to the development of these few and scattered germs of universal education.

CHAPTER XIII

THE CLASSICAL SCHOOLS OF THE SIXTEENTH CENTURY

Sturm's School at Strassburg.—But if the humanistic movement had little influence upon elementary school-work, it ultimately wrought great and lasting modifications of secondary school education. In the Protestant school under Sturm at Strassburg and in the schools of the Jesuits the humanistic secondary school assumed a definite and permanent form, which survives in the classical grammar school of to-day.

John Sturm, after a preparatory education with the children of his father's patron, Count Manderscheid, attended a school at Lüttich under the control of the Brethren of the Common Life. Both the organization and curriculum of this school served Sturm as models in his subsequent work as organizer and director of schools. It consisted of eight carefully graded classes. The like proficiency of the members of each class was maintained by strict half-yearly examinations. The course of study was humanistic. The medieval 'Doctrinale' of Alexander de Villa Dei (see p. 105) was replaced by a course in grammar so concise as to facilitate the early

reading of the Latin texts themselves. Only the classical Latin authors were read.

After completing his course at the university of Louvain and devoting some time to studying and teaching at the university of Paris, Sturm undertook to complete the reorganization of the work of the Strassburg schools, so as to bring it into harmony with prevailing humanistic ideals. So successfully did he carry out this undertaking that the school became perhaps the most famous of its time. This success seems to have been due largely to the fact that Sturm was guided in his school-work by a clearly defined aim, which, though narrow, was yet well suited to the tastes and needs of his time. This aim was the cultivation of knowledge, piety, and eloquence. The eloquence desired was that in the Latin tongue, the knowledge to be imparted was mainly such as would aid in the appreciation and use of Latin. The work of the ten classes into which the school was divided was carefully graduated.

Though the course comprehended nearly all the subjects of the traditional trivium and quadrivium as well as the Reformation studies of the Catechism and the Bible, yet every subject was made contributory so far as possible to the great central aim of developing in the pupil the ability to speak and write Latin in an elegant Ciceronian fashion. The careful attention paid by Sturm, Ascham, the early Jesuits, and other educators of this period to methods of teaching Latin translation and composition resulted in a teaching efficiency in these subjects which

compares favorably with that of our best modern schools.

THE COUNTER-REFORMATION

The Schools of the Jesuits.—In the struggles of the Reformation period there arose within the Roman Church a new order, the Order of Jesus, which for several centuries was to play a leading part in the school-work of Western Europe.

In several respects the Jesuit stood in sharp contrast to the older monastic orders. While the latter were more or less democratic, the former was monarchical and autocratic in organization. Founded by a soldier and a zealot, the Spaniard Ignatius Loyola, its discipline was more than military in its rigor. Absolute, unquestioning obedience to those in command was demanded of each member. While the older monastic orders afforded a place of retreat from the world, the Jesuits were active in the very centers of social and political activity.

In their struggles to advance the interests of the Roman Church they had recourse to the confessional, to preaching, and to school-work.

To the older monastic orders the school was an institution of secondary importance. To the Jesuits it was one of the chief means of accomplishing their ends, namely, the extension of the Catholic faith and of the influence of their own Order. Not interested in school education merely for its own sake, they set up no new standards of liberal education, but simply adopted those of the prevalent humanistic move-

ment. But the zeal, the singleness and fixity of purpose, the efficiency of organization which distinguish the Order enabled it to evolve systems of instruction and of school management which for centuries placed its schools in the front rank among those of Western Europe.

The difficulties encountered in the prosecution of school-work awakened a desire for a summary of the most valuable results of the experience of teachers. Just as the similar need of modern teachers has been met by such works as the 'Report of the Committee of Ten,' so that of the Jesuit teachers led to the formulation in 1586 of the 'Ratio Studiorum,' the result of the labors of a committee of six. Slightly modified and rearranged in 1599, the 'Ratio Studiorum' continued to prescribe Jesuit school organization and procedure down to the nineteenth century. Indeed, it did not undergo any fundamental changes even then.

The schools of the Jesuits, none of which are lower than the secondary, are of three ranks—the grammar school, the higher school of philosophy, and the school of theology, in which the course culminates. The 'Ratio' prescribes rules for the school officials and teachers in order of rank.

As in Sturm's school, the work in the grammar school centered about the cultivation of a mastery of Latin style. The first four grades, known as the lower, middle, and higher grammar, and humanity, respectively, required one year each; the final grade, known as rhetoric, required two years.

The grammar course was followed by a three years' course in the philosophical school, in which mathematics, logic, metaphysics, ethics, and physics were studied. This course completed, from four to six years were devoted to teaching in the lower classes. In order to minimize the harm resulting from the work of inexperienced teachers, the 'Ratio' prescribed that "in order that the young teachers of the lower classes may not enter upon their duties without practical preparation, the Rector shall select an experienced teacher, and those who are about to take up teaching will spend with him three hours a week in order that through lecturing, dictating, writing, and the other duties of a capable teacher they may be trained for their new calling." At the close of this period the student enters upon a five-year course in the theological school, where he studies Hebrew church history, canon law, apologetics, and casuistics.

Classes were subdivided into groups of ten, each in charge of a student known as a decurion. While the latter heard the recitations on the work of the preceding day, the teacher corrected the written exercises. School-work was made as tolerable as possible for the pupils. The tasks were light and the daily program, never longer than five hours, was relieved by intermissions. The vacations were relatively long.

Both the spirit of the humanistic movement and the ultimate purpose of Jesuit school-work favored the adoption of mild and agreeable methods of dis-

cipline. The motives of rivalry and of personal ambition already generally utilized in humanistic schools were employed to a greater extent than ever before. Each pupil had his particular 'adversarius.' The failure of either to correct any error of the other was counted as a demerit. The scholastic disputations were continued and elaborated in the frequent contests between classes or sections of classes to determine which could display the widest and most accurate knowledge of a given subject. Offices of dignity, prizes, membership in select academies of students, all awarded with *éclat*, stimulated pupils to effort. Corporal punishment was inflicted only as a last resort and never by a member of the Order. In the system as a whole good and evil are strangely interwoven. On the one hand there are the definiteness of aim, the adaptation of means to end, the intelligently elaborated method, the concentration of effort, the neatness and order in their establishments, the mildness of their discipline. On the other hand there are the encouragement of the spirit of emulation and of spying among the students, the ceremoniousness and display, and over all a spirit foreign to the true aim of education.

CHAPTER XIV

EFFECT OF THE REFORMATION UPON THE SCHOOLS OF ENGLAND

IN England, as elsewhere, the great majority of the schools were, up to the sixteenth century, connected with the Church as cathedral, collegiate church, monastic, chantry, hospital, guild, or other schools. The multiplication of these endowments for the maintenance of religious services and of schools had led to many abuses and to a great deal of corruption. The people of a present generation could have little interest in the indefinite continuance of masses for the soul of an unknown person two centuries dead, hence there naturally arose abundant cause for such complaints as that contained in the preamble to the Chantries Act of Henry VIII, namely, that "many of the . . . patrons, or such as pretend to be, . . . have expulsed the priests . . . and do occupy the masters' houses, and do convert the rents to their own uses." On this account an act was passed which enabled the king to appropriate religious endowments of this sort to defray the expenses of his wars against France and Scotland. Henry VIII, himself a believer in purgatory, did not bring about any sweeping confiscation of these institutions. Soon after the accession of his son, Edward VI, an-

other act was passed for the suppression of chantries, hospitals, guilds, and other like endowments, this time, however, not for economic but for religious reasons. The act recites that "A great part of the superstition and errors in Christian religion has been brought into the minds and estimation of men, by reason of their ignorance of the very true and perfect salvation through Christ Jesus, and by devising and fancying vain opinions of purgatory and masses satisfactory to be done for them which be departed, the which doctrine and vain opinion by nothing more is maintained and upholden than by the abuse of treatals, chantries, and other provisions made for the continuance of the said blindness and ignorance."

The end aimed at in these acts was generally commended. The purpose as stated in the act itself was to apply chantry and similar endowments "to good and godly uses, as in the erecting of grammar schools to the education of youths in virtue and godliness, the further augmenting of the universities, and better provision of the poor and needy." The effect of the act upon school education in England was, however, deplorable. The secularization of such vast amounts of property, particularly in a period when, owing to the youth of the king, the government was in the hands of a regency, afforded abundant opportunities for corruption. A large portion of the wealth, instead of being applied to the support of schools, was appropriated by private individuals. The Master of St. John's, Cambridge, in a sermon before Edward VI said, "Now many grammar schools be taken,

sold, made away to the great slander of you and your laws, to the grievous offense of the people, to the most miserable drowning of the youth in ignorance, and sore decay of the universities." Thomas Williams, Speaker of the House of Commons, complained similarly to Queen Elizabeth in 1562 of the decay of the schools and stated "that at least one hundred were wanting in England which before that time had been."

The property of most of the religious establishments dissolved by the Chantries Act passed into the hands of the crown. The schools attached to these establishments were to be maintained by regular payments made by the crown from the income of the confiscated property. In this way the chantry, stipendiary, and guild schools are transformed into 'grammar' schools and usually into 'Royal Grammar Schools' of Edward VI or of Elizabeth; for, through a courtesy common in monarchical states, these payments by the crown were considered conventionally as gifts. The injury done to the schools of England through the Chantries Act was due not only to the greed and dishonesty of those charged with its execution but to the impoverishment of the schools through this substitution of a fixed annual sum for the income from lands and other possessions, the value of which subsequently increased, in some instances, tenfold. The relatively few schools which were allowed to retain their lands have vastly increased in wealth. The lands of the Macclesfield grammar school, for instance, were restored to it. "The total value of the

school endowment was £21 4s. It has not received any known increment, but its income is now £1,600 a year." On the other hand the grammar school at Bodwin, for example, was continued with a fixed payment from the crown of £5 6s. 8d., a sufficient salary for a teacher in the early part of the sixteenth century, but altogether inadequate in later times. It is not then to be wondered at that the report of 1867 states that the school "formerly held in St. Thomas' Chapel" is no longer in existence.

THE ENDOWMENT OF SCHOOLS IN ENGLAND AFTER THE REFORMATION

Though the Reformation put a stop to the establishment of chantries and like institutions with which, perhaps, most of the grammar and elementary schools had formerly been connected, nevertheless the cause of education continued to be furthered through the endowment of schools by private benefactors. It was probably the number and extent of such benefactions which made it possible for England to dispense for so long with a state system of public schools. The following will afford an idea of the general character of these endowments and will illustrate the dangers to which they were exposed. In 1637 John Pym granted to six trustees a yearly rent of £10 issuing out of certain pasture grounds in the Parish of Brill "for the use of the schoolmaster in Brill chosen by the trustees to pay him for teaching ten children of the poor inhabitants of Brill. In 1705 . . . it was found that there was issuing out of

the lands of Richard Greenwill in the Parish of Boar-stall a yearly rent charge of £10 to the schoolmaster aforesaid and that thirty-four and one-half years of the said annuity was at that time in arrear; and it was decreed . . . that the said Richard Greenwill should at a certain day mentioned pay £300, part of the arrears of the said annuity . . . to be an augmentation for the said schoolmaster and his successors; for which the said schoolmaster should be obliged to teach fifteen poor children of Brill over and above the number appointed by the donor of the charity of £10 per annum." The report on another school gives some interesting data as to the housing and the administration of some of the endowed schools. William Elmer in 1648 appointed that certain estates be conveyed to "John Eyres and five others to erect a schoolhouse with three bays of building, with stone and tile and lofted throughout, with two chimneys and glass doors, and stairs and that the said John Eyres and the others should appoint a sufficient man being a good scholar and a single man to be schoolmaster there and to teach all youth and children as should resort to him in the English and Latin tongues, and to write and cast accounts . . . and that he should take no bribes of his scholars nor their friends, but only two pence a scholar to enter them in his book, and his will was that the master should have the furze to burn in winter-time to warm him and his scholars in the schoolhouse." On this endowment the Commissioners report in 1833 that, "The school land consists of fifty-three acres of pasture, very poor

land let at a yearly rent of £48. The schoolhouse contains three apartments; the school is in the middle; there is a parlor at one end and a kitchen at the other, with bedrooms above. The master lives in the house and is unmarried. There are nearly eighty boys on the books, but not above forty usually attend in summer and between fifty and sixty in winter; they are taught reading, writing, and arithmetic, but no Latin, for which there is never any demand. The master also teaches a few girls as pay scholars, but he receives and teaches gratuitously all boys who come to him from whatever parish."

CHAPTER XV

EDUCATIONAL REFORMERS, RABELAIS, MONTAIGNE

THE Renaissance, notwithstanding its limitations and notwithstanding the movements, theological, political, and otherwise, which hampered and obscured it, wrought a change in the status of educational work which has never been undone. It re-established liberal education. Hitherto school education had been regarded as something essentially clerical, clerkly. It had consisted mainly in the laborious appropriation of the traditional quantum of the seven liberal arts. From the time of the Renaissance on, however, men began to look upon it more and more as an essential part of that training and instruction which will enable a man to get the most out of life, which will enable him to perceive, to feel, to think, to act so that his life will have the highest possible value for himself and hence for others. For this reason education becomes a subject of prime importance from the Renaissance period on, a subject studied and discussed by a succession of the most eminent thinkers and writers of modern times. The views of these men have stimulated and directed the efforts of certain great reformers of school education and have thus affected the character of the school-work of to-day.

An early and striking manifestation in literature of this new conception of education is to be found in the writings of Rabelais, one of the world's great humorists. The twenty or thirty years of the fifteenth and sixteenth centuries during which this jovial and ebullient genius chafed under the restraints of monastic rule were utilized by him in the acquirement of a vast erudition. At the same time he acquired a dislike for the monastic life and for the tedious and futile drudgery of the monastic schools only equaled by the enthusiasm with which he shared in the views and aspirations of the early Renaissance. The contrast between the monastic and the Renaissance education is powerfully set forth in a strange jumble of riotous fancy, of humor and wisdom entitled 'Gargantua and Pantagruel.' Gargantua, a giant like his parents, Grandgousier and Gargamelle,—all characters known in the folk-lore of the time,—is subjected to the traditional medieval education. "In the first place he was taught by a wonderful master of sophism, Holofernes, who instructed to such purpose that he could say his A B C by heart backwards. And for this were needed five years and three months; then were read Donat,¹ le Facet, Theodelet,² and Alanus in Parabolis, for the space of thirteen years, six months, and two weeks, . . . then were taught him the De Modis Significandi and the commentaries . . . for the space of eighteen years and eleven months, and he knew it so well that at his examination, he said it by heart backwards. . . . Then he

¹ See p. 101.

² See pp. 107-109.

was taught the Compost [computus] for the space of sixteen years and two months, when his preceptor died." After this fifty-four years of training Gargantua is found on his return home to be more loutish and incapable than ever.

A description of the course taken by Gargantua under a more progressive and up-to-date teacher affords Rabelais an opportunity of setting forth his views on education as it should be. The day's work begins about four in the morning. No time is lost. Extracts from the Scriptures are read to Gargantua while he is bathing. The difficult passages are afterwards explained. The appearance of the sky is then noted, and compared with that of the preceding night. The lessons of the preceding day are reviewed while he is dressing. Sometimes this provokes lengthy discussions. Without interrupting these, Gargantua and his tutor take their daily physical exercise, playing tennis and other games with such ardor as to induce profuse perspiration. After a vigorous 'rub-down' and a change of clothing they are ready for dinner. While waiting extracts from the lessons are recited. "At the beginning of the repast some pleasant tale of ancient valor is read to them; then, if they please, the reading is continued, or they converse cheerfully together, talking of the virtues, properties, efficacy, and nature of everything on the table. So doing they soon learn what the ancient authors have taught us in these matters. Then, finishing the repast with confections, they wash their faces and hands in cold water and give thanks to God for his

bounty. Games with cards and dice are then played, not merely for amusement but to cultivate skill in mathematics. Other mathematical sciences, music, geometry, and astronomy, are learned in a similar manner."

When sufficient time for digestion has been passed in light and easy pastimes of this sort they enter upon the main studies of the day. Former studies are reviewed and new studies are introduced. At the close, another period is devoted to physical exercise, horseback riding, hunting, exercises with the sword and the lance, swimming, climbing, shouting, etc. Soothed and refreshed by a bath they take a walk in the open, studying trees, plants, and flowers. After a hearty evening meal they occupy themselves with music or cards, or engage in conversation with travelers, writers, or other able and interesting men. Before retiring the heavens are again noted. The day closes with the Pythagorean exercise of recalling everything learned or experienced during the day. In bad weather visits to the shops of craftsmen were substituted for the outdoor exercises and studies. In the attention paid to physical training and to the direct study of things and processes important in everyday life, as well as in the spirit of interest and enjoyment which permeates the whole, the course is instinct with the purer spirit of the early Renaissance and is in sharp contrast with the work of the medieval schools.

Montaigne.—Another influential writer on education was Michel de Montaigne, a French nobleman,

the earliest and one of the greatest of the essayists. He had himself been the object of some curious experiments in education. "Before the first loosing of my tongue," he writes, "I was delivered to a German . . . exquisitely ready and skilful in the Latin." From his early infancy Montaigne heard nothing but Latin and acquired a thorough knowledge of the language. In two of his essays, 'On Pedantry' and 'On the Education of Children,' he sets forth clearly the early Renaissance attitude toward education in that, condemning and opposing the blind and unthinking study of the subjects of the traditional school course, he advocated such instruction and training only as would most contribute to the richness and fullness of life in the everyday world of the present. "We labor, and toil, and plod to fill the memory," he writes, "and leave both understanding and conscience empty." . . . "We can talk and prate, Cicero saith thus, these are Plato's customs, these are the very words of Aristotle; but what say we ourselves? What do we? What judge we? . . . Whereto serveth learning if understanding be not joined to it?" Regarding the tutor, Montaigne writes, "I would rather prefer wisdom, judgment, civil customs, modest behavior than bare and mere literal learning. . . . I would not have him to invent and speak alone, but suffer his disciple to speak when his turn cometh. . . . I would not only have him to demand an account of the words contained in the lesson but of the sense and substance thereof. . . . I would have him make his scholar narrowly to sift all things with

discretion, and harbor nothing in his head by mere authority or on trust. . . . It is not sufficient to make his mind strong, his muscles must also be strengthened. . . . He must be enured to suffer the pain and hardness of exercises." After some direction as to the cultivation of manners, Montaigne recommends as regards the course of study, "Let him hardly be possessed with an honest curiosity to search out the nature and causes of all things; let him survey whatsoever is rare and singular about him; a building, a fountain, a man, a place where any battle hath been fought. . . . He shall by the help of histories inform himself of the worthiest minds that were in the best ages. . . . To conclude, I would have this world's frame to be my scholar's choice book; so many strange humors, sundry sects, varying judgments, diverse opinions, different laws, and fantastical customs teach us to judge rightly of ours; . . . so many innovations of estates, so many falls of princes, and changes of public fortune, may and ought to teach us not to make so great account of ours. . . . I would not have his budding spirit corrupted with keeping him fast-tied, and, as it were, laboring fourteen or fifteen hours a day poring on his book . . . for that doth often make him both unapt for civil conversation and distracts him from better employments. . . . All sports and exercises shall be a part of his study; running, wrestling, music, dancing, hunting, and managing of arms and horses. I would have the exterior demeanor or decency and the disposition of his person to be fashioned together with his mind;

for it is not a mind, it is not a body that we erect, but it is a man, and we must not make two parts of him." In regard to the study of Latin and Greek, which occupied by far the greater part of the time of the schools, Montaigne writes, "I would first know mine own tongue perfectly, then my neighbors' with whom I have most commerce. I must needs acknowledge that the Latin and Greek tongues are great ornaments in a gentleman, but they are purchased at over-high a rate."

CHAPTER XVI

THE SCHOOLS OF ENGLAND IN THE SEVENTEENTH CENTURY

EARLY in the seventeenth century the English colonies in America had become fairly well established, and the school along with other religious and municipal institutions was transplanted in the soil of the New World. The character of these schools will be better understood after a survey of the European schools of this period, especially those of England and Scotland.

The progress of general school education in England had been checked in the destruction, through the execution of the Chantries Act, of many of the song schools which had hitherto afforded the poorer classes an elementary education. Hoole, a teacher and an educational writer of the seventeenth century, classifies the schools of his time into Petty, Writing, and Grammar schools. In the petty or reading school only the alphabet, reading, and spelling were taught, though in some instances it strove to afford a knowledge of the rudiments of Latin sufficient to enable the pupil to take up the work of the grammar school. In the writing school, as the name indicates, writing was taught and more advanced exercises in reading were given. Sometimes arithmetic and occa-

sionally other arts useful in everyday life, such as drawing and music, were also taught. The grammar school was concerned almost exclusively in developing a reading and writing knowledge of Latin and in some cases of Greek.

The schools of each of these classes varied greatly in character; furthermore, the functions of two or more of them were often performed by one and the same institution.

In some instances the petty school was endowed, but as a rule so meagerly that only those in the most destitute circumstances would take up the work. Hoole speaks of petty school teachers as "Poor women or others whose necessities compel them to undertake it as a mere shelter from beggary." Here and there the petty school was an outgrowth of an ancient institution, the day nursery or 'crèche' still common in Europe. It is to this that the poet Crabbe refers:

"To every class we have a school assigned,
Rules for all ranks and food for every mind;
Yet one there is that small regard to rule
Or study pays, and still is deemed a school;
That, where a deaf, poor, patient widow sits,
And awes some thirty infants as she knits—
Infants of humble, busy wives who pay
Some trifling price for freedom through the day."

The features characteristic of a school are more prominent in the institution described in Shenstone's 'Schoolmistress':

“ In every village marked with little spire
 Embowered in trees and hardly known to fame;
 There dwells in lowly shed and mean attire,
 A matron old whom we Schoolmistress name; . . .
 . . . Lo—now with state she utters her command
 Eftsoons the urchins to their tasks repair;
 Their books of stature small they take in hand,
 Which with pellucid horn securèd are
 To save from finger wet the letters fair.”

As regards the buildings and furniture of these schools a commissioner of a somewhat later period reports, “ The Dames usually live in one room which serves every purpose. . . . Scholars may often be seen sitting round the sides of a four-post bed on low forms, the sides of the bed forming a back to the seat, sometimes on the sides of the bed.”

Here and there the people of a parish seem to have provided for an elementary school by voluntarily taxing themselves, but it is not until the eighteenth century that we find in England traces of the beginning of a general movement for the school education of the people as a whole.

The elementary education of the young of the middle and upper classes consisted in preparation for the work of the grammar school. Among the gentry and nobility this work was carried on at home under the care of a tutor. Provision for elementary instruction was, however, sometimes made in connection with the grammar school. This elementary department was maintained frequently by extra tuition charges; sometimes, however, by the endowment as in the Chesterfield grammar school, the endowment of

which provided a salary of £15 for the master and one of £8 for an 'A-B-C-Darius.'

The writing schools were probably a continuation of the writing and reckoning schools of the medieval period. They were attended by the pupils who had finished the 'Petties' and who wished such instruction as would fit them for ordinary business life. The chief subjects of these schools, writing and arithmetic, were still regarded as semi-professional in character.

The grammar schools of the period may be divided roughly into three classes:

I. Those formerly connected with religious institutions, chantries, guilds, etc., and which were maintained wholly or in part by a fixed government stipend in lieu of the lands and possessions confiscated by the crown.

II. Those endowed by individuals or corporations since the Reformation period.

III. Old institutions like Eton and Winchester, which, exempted from the operation of the Chantries Act, retained their property.

Many of the first class are called the Royal Grammar Schools of Henry VIII, Edward VI, Queen Mary, or Queen Elizabeth, and are commonly referred to in reports as having been founded by the sovereign whose name they bear. Of those of the second and third classes some, such as Eton, Winchester, Harrow, and Rugby, have, owing to the munificence of their founders or other causes, become great national schools.

SURVIVAL OF CLERICAL CONTROL

The transfer of schools from the Church to the state brought about through the Chantries Act did not bring to an end, however, the tradition of clerical control of the schools. This tradition gave rise to disputes in the seventeenth as in earlier centuries. In 1616 the 'eighteen men' elected to control the school in the parish of Crosthwaite in Cumberland had dismissed the schoolmaster, Thomas Garth, for negligence and misconduct. But "notwithstanding their discharge he had intruded himself into the school by the countenance and assistance of Henry, Lord Bishop of Carlisle, and Giles Robinson, his brother, then Vicar of Crosthwaite, who pretended to have the power of collation, placing and displacing of the schoolmaster." A court of inquisition settled the dispute by decreeing "that the eighteen sworn men of the parish at that time and to be elected thereafter, shall be as of right they are and ought to be . . . the sole and only governors of the said school."

COURSES OF STUDY, METHODS, DISCIPLINE OF SEVENTEENTH CENTURY SCHOOLS

Nothing more clearly indicates the descent of the elementary school from the schools of the Church than the procedure in teaching to read. The work began with the 'hornbook,' a wooden paddle on which, covered by a plate of transparent horn, was a placard containing the alphabet in small letters and

in capitals, a few simple combinations of letters, ab, eb, ib, ob, etc., also a benediction and the Lord's Prayer (see p. 214). The cross usually found at the head of the alphabet was perhaps placed there originally to invoke divine aid and to counteract any evil magic that might lurk in those mysterious signs. In 1398 John Trevisa quaintly writes:

"Cross was made all of red
In the beginning of my boke
That is called God me sped,
In the first lesson that I took.
Then I learned a and b,
And other letters by her names;
But alwey God spede me
Thoughte me needful in all games."

Following the hornbook came the 'abce,' or the 'abcie,' a series of distichs the chief words of each of which began respectively with the letters of the alphabet in order, thus:

- | | |
|---|--|
| A. In <i>Adam's</i> fall We sinned all. | C. The <i>cat</i> doth play And after slay. |
| B. Thy life to mend This <i>book</i> attend. | D. A <i>dog</i> will bite A thief at night. |

These are common in the child's books of to-day.

The 'abce' mastered, the child took up the reading of the primer, so called because it was originally a book of prayers and devotional exercises used at the prime or dawn. At the Reformation it contained prayers, graces suited to a variety of occasions, and meditations; later it contained also passages from the

Catechism, all of which were to be memorized. In New England at the close of the seventeenth century the hornbook, the 'abce,' and the primer were combined into one and the name 'primer' was given to the whole. The famous 'New England Primer' is a book typical of this class.

The reading-books were almost all religious in character. The following recommended by Hoole seem to represent fairly well those actually in use. "The first and lowest [form] should be of those that learn to know their letters, whose lessons may be in the primer; the second [form], of those that learn to spell, whose lessons may be in the single Psalter; the third, of those that learn to read, whose lessons may be in the Bible; the fourth, of those that are exercised in reading, writing, and casting accounts, whose lessons may be in such profitable English books as the parents can best provide and the master thinks fittest to be taught."

Writing, though taught regularly in the writing school, was sometimes taken up in the later stages of the petty school course. It seems to have been a source of trouble to the often ignorant and incapable elementary teachers of the times. One of these gives his experience as follows: "I have daily set them copies, so well as I could, which hath been no small toil unto me; or else I have caused some of my scholars or some others to do it, . . . and it may be I have corrected them for writing so badly or guided some of their hands or shown them how to amend their letters. This I take to be the most that

is done in schools ordinarily; unless any do procure scriveners to teach in their towns." The teachers in the regular writing schools, we may presume, possessed a greater mastery of the art. The passage just quoted shows that the connection between the arts of the scrivener and the teacher, noted in ancient and medieval times (see pp. 7, 67, 164), persisted until a comparatively recent period. It was not uncommon even in colonial America. In 1684 Guiliam Bertholf, a New Jersey teacher, describes himself as "schoolmaster and authorized scrivener residing at Acquackanonck."

In the petty school frequently no attention was paid to arithmetic. Mulcaster, writing in the sixteenth century, makes no mention of arithmetic as an elementary school subject. "This therefore shall suffice now that children are to be trained up in the Elementarie Schoole—in these fower things, Reading, Writing, Drawing, and Musick." He relegates mathematics, including arithmetic, to the collegiate course. The subject seems to have had a regular place only in the curriculum of the writing school. Even in America during this period, says Eggleston, "a lad of fifteen or more on leaving the grammar school was often ignorant of numbers; some did not know the numerals, Roman or Arabic, and could not find the chapter in the Bible, much less the verse."

The course of study in the grammar school had undergone no essential change since the time of Sturm and Colet.

In petty schools, writing schools, or grammar schools such as these were trained the pioneers of the great English colonies in America, and these were the schools which they erected with such promptitude when they had established themselves in their new home.

CHAPTER XVII

EARLY COLONIAL SCHOOLS IN AMERICA

IF the preoccupation of the Puritan pioneers of New England with purely religious questions narrowed somewhat their outlook on life, their Calvinistic doctrines made it logically necessary for them to attach importance to the school education of the young. If salvation is by faith alone, and if the Bible is "the only infallible rule of faith and practice," it becomes vastly important, not only that gifted men should be trained to the true interpretation of the Scriptures, but that every one should obtain at least enough schooling to enable him to read them. It is this attitude toward education that is expressed in the Massachusetts Ordinance of 1647. "It being one of the chief projects of that old deluder, Satan, to keep men from the knowledge of the Scriptures, as in former times, by keeping them in an unknown tongue, so in these later times by persuading them from the use of tongues, that so at least the true sense and meaning might be clouded by false glosses of saint-seeming deceivers; and that learning may not be buried in the grave of our forefathers in Church and commonwealth, the Lord assisting our endeavors: it is therefore ordered—that every town-

ship in this jurisdiction, after the Lord hath increased them to the number of fifty house-holders, shall then forthwith appoint one within their own town to teach all such children as shall resort to him to write and read." Hence the promptitude with which schools were established in the infant settlements of New England. In addition to this motive there were others. Many of the Puritan settlers were people of wealth and culture, who had attended grammar schools and colleges in England, and who would naturally feel more keenly the need of such institutions in their new home. In 1635, five years after the settlement of Boston, the town meeting voted "that our brother, Philemon Pormont, shall be intreated to become schoolmaster, for the teaching and nourtering of children with us." In the following year a subscription was made in a "general meeting of the richer inhabitants . . . towards the maintenance of a free schoolmaster for the youth with us, Mr. Daniel Maud being now chosen thereunto."

These earliest schools were maintained frequently, in accordance with the English custom, by endowments of land. The Mr. Pormont above mentioned is said to have received thirty acres of land. Later the rents of Deer, Spectacle, and Long islands in Boston harbor were set aside for the support of the Boston Latin School. The first schools in Charlestown and Dorchester were supported by the rents from Lovell's and Thomson's islands respectively. The General Court granted Charlestown and Cambridge

1000 acres each toward the support of their grammar schools. In 1671, Thomas Bell, in the time-honored English fashion, left about 200 acres of land "to and for the maintenance of a schoolemaster and free school for the teaching and instructing of poore men's children at Roxbury."

An interesting beginning in the way of supporting schools by a municipal tax is to be noted in the Connecticut colony of New Haven in 1642. A court record of that date reads: "Itt is ordered thatt a free schoole shall be sett up in this towne and our pastor, Mr. Davenport, together with the magistrates, shall consider whatt yearly allowance is meete to be given to itt out of the common stock of the towne."

Hitherto only individual schools have been mentioned. An early beginning of our state system of schools may be traced in the ordinance above mentioned of the General Court of Massachusetts: "That every township in this jurisdiction, after the Lord hath increased them to the number of fifty house-holders, shall then forthwith appoint one within their town to teach all such children as shall resort to him to write and to read, whose wages shall be paid either by the parents or masters of such children or by the inhabitants in general." Similarly every town of 100 house-holders was to support a grammar school.

CLASSES OF COLONIAL SCHOOLS

The first schools founded in New England were naturally of the same classes as those in England.

The Boston Latin, the first of these, conformed closely to the type of the ordinary grammar school of England. The Salem grammar school was founded about the middle of the seventeenth century. About 1699 a writing school was established. In the smaller communities the petty, writing, and grammar schools were sometimes united, although as a rule the distinction between the grammar and the more elementary schools seems to have been preserved. The plan for Connecticut and ultimately for all the colonies comprised "common schools," in which boys might "learn to read and write and cast up accounts and make some entrance into the Latin tongue; secondly, a school with a schoolmaster qualified to teach Latin, Greek, and Hebrew." In America as in England the Dame school was a common form of the petty school. Later it became the custom in rural districts to engage a schoolmistress for the younger children during the summer, while a master was engaged to teach the older pupils during the winter.

THE DECLINE OF THE COLONIAL SCHOOLS

For a generation or two the fear of the Indians led the colonists to live together in towns where the maintenance of and attendance at schools was more practicable and where the need for them was greater than it would be in the country. With the removal of this danger they began to scatter through the wide wilderness which they had undertaken to subdue. This had an important effect upon the schools. Just

as culture and the schools which transmit it flourish in centers of population, they decline when these are broken up. 'Not only was the need of culture less urgent to these isolated families, but living at distances from one another it became less practicable for the children to assemble in schools.' Moreover, the rationalistic reaction against the excessive religiosity of the Puritan movement was already setting in, and the decline of interest in the Church meant a decline of the schools, most of which were, at that time, mere annexes to it. Even in towns the schools fell more and more into neglect. To prevent this fines were imposed upon delinquent communities; later these were doubled, but all to no avail.

CHAPTER XVIII

BACON AND THE NEW ERA IN SCIENCE

WHILE European civilization and its schools were thus being transplanted into the Western Hemisphere, a great movement in the intellectual world, which was to mold the character of the cultural activity of succeeding ages, and which had been inaugurated mainly under the leadership of Francis Bacon, was slowly gaining headway.

The humanistic Renaissance led naturally to the study of natural objects and forces. The medieval scholar regarded the present material world with relatively little interest or intelligence. Books, particularly the works of Aristotle, were used as the most reliable sources of information regarding natural objects. With the revival of interest in man and this present life men began to make a first-hand study of nature. In this pursuit certain men of genius, such as Leonardo da Vinci, employed the inductive method. The work of formulating this method and of attracting general attention to its vast importance in extending man's knowledge of and hence his control over nature was carried out by Bacon.

Hitherto in none of the great periods of intellec-

tual revival had the human mind centered its efforts upon a systematic and effective study of nature. And yet it is the knowledge of and the consequent ability to control and appropriate natural forces and objects that constitute the very foundation of civilization. Bacon's aim was to establish the natural sciences, and through the effective pursuit of them to "lay more firmly the foundations and extend more widely the limits of the power and greatness of man" (N. O., Aph. 116).

Bacon accounts for the backwardness of the natural sciences by stating that only six out of the twenty-five centuries that had elapsed from the beginning of the Greek period had been centuries of progress, and even during these six centuries the human mind had turned aside to the pursuit of speculative philosophy, politics, morals, or theology, and had paid least attention to the natural sciences; and the little effort that had been made had been rendered nugatory through erroneous methods. Hence "from all these systems of the Greeks and their ramifications . . . there can hardly . . . be adduced a single experiment which tends to relieve and benefit the condition of man" (N. O., Aph. 73). "An astonishing thing it is," he writes, ". . . that no mortal should have seriously applied himself to the opening and laying out of a road for the human understanding direct from the sense, by a course of experiment orderly conducted and well built up; but that all has been left either to the mist of tradition, or the whirl and eddy of argument, or the fluctuation

and mazes of chance, and of vague and ill-digested experience."

He strove to lead men from the relatively profitless studies of logic, speculative philosophy, and theology to the acquisition of accurate knowledge of the world of nature amidst which they lived. For, "Man, being the servant and interpreter of nature, can do and understand so much and so much only as he has observed in fact or in thought of the course of nature; beyond this he neither knows anything nor can do anything" (N. O., Aph. 1). The results of these investigations were to be made reliable through the application of direct observation, experiment, and painstaking induction, "that so at length, after the lapse of so many ages, philosophy and the sciences may no longer float in air, but rest on the solid foundation of experience of every kind, and the same well examined and weighed" (N. O., Ded. Ep.). "Those who aspire," he says, "not to guess and divine, but to discover and know, who propose not to devise mimic and fabulous worlds of their own,¹ but to examine and dissect the nature of this very world itself, must go to facts themselves for everything, nor can the place of this labor and research and world-wide perambulation be supplied by any genius or meditation."

Bacon was enthusiastically confident that the pursuit, by the method of experimental observation and induction, of knowledge of the natural world about us, would bear fruit in "helps to man and a line and

¹ For examples of this see pp. 124 and 125.

race of inventions that may in some degree subdue and overcome the necessities and miseries of humanity" (N. O., Plan). Subsequent history has substantiated his views.

The amelioration of the conditions of human life he considered the great end of science. Knowledge, he contended, is to be sought, "not for pleasure of the mind, or for contention—or for profit, or fame, or power—but for the benefit and use of life" (N. O., Pref.). "The true and lawful goal of the sciences is none other than this; that human life be endowed with new discoveries and powers" (N. O., Aph. 81). Furthermore, he maintained that through the application of the inductive method the natural sciences would be lifted out of the condition of stagnation in which they had remained for centuries, and made to live and increase, for "what is founded on nature grows and increases; while that which is found on opinion varies but increases not" (N. O., Aph. 74).

Notwithstanding the fact that the mastery of the method has required much more time and pains than Bacon and his co-workers anticipated, and that the operations of nature are infinitely more abstruse than they imagined, the truths promulgated by Bacon have borne abundant fruit in making our age pre-eminently one of invention and of scientific discovery, and in enormously extending the control of man over nature.

CHAPTER XIX

SCHOOL REFORMERS OF THE SEVENTEENTH CENTURY

Ratke.—One of the first to apply these great reforms in scientific method to the work of the school was Wolfgang Ratke. After graduating from the University of Rostock, and finding himself ill-fitted for the clerical profession, he traveled in Holland and in England, where he was infected with the prevailing enthusiasm for the new scientific method recently set forth by Bacon.

The system of school reform to which he devoted mainly the rest of his life manifests the influence of these new ideas. He emphasizes the importance of direct observation as a means of acquiring knowledge, and proposes the, at that time, novel plan of giving instruction in the arts and sciences in the mother tongue.

Comenius.—A little later, Comenius, a leader among an evangelical religious sect known as the Moravian Brethren, skilfully embodied something of the new scientific spirit in a scheme of education essentially religious in its aims. Notwithstanding his somewhat narrow religious point of view, his outlook on school education is so comprehensive and clear

and his suggestions as to school procedure are so eminently wise that they will be discussed more in detail.

John Amos Comenius, pastor and later bishop among the Moravian Brethren, became famous throughout Europe as the author of the 'Janua Linguarum,' a Latin text-book in which the different features of the environment of everyday life were discussed in a series of lessons printed in Latin and in the mother tongue in parallel columns.

Left an orphan, his early education was neglected by his guardians until he himself set about remedying the defect and with such zeal that, notwithstanding the deficiencies of the schools he attended, he completed his college course while still too young to be admitted to the ministry. Hence he began teaching in the school at Prerau, where he had received his secondary instruction. His interest in school-work suffered no diminution when later he was appointed pastor at Fulneck, where the supervision of the schools formed part of his official duties. A few years later he and his co-religionists, banished from Bohemia, found refuge at Lissa in Poland. Here Comenius was appointed master and later Rector in the Gymnasium.

Comenius was a voluminous writer not only of school texts and treatises on education but of theological and scientific works. So wide was his fame as an educator that he was invited to various countries to consult with the authorities regarding the reorganization of schools, and he actually visited for

this purpose England and Sweden. While at Lissa he published the 'Janua' and the 'Great Didactic.'

The 'Great Didactic' remains to-day one of the most comprehensive, one of the clearest and most logically planned of all general treatises on education. It is at once a work on the philosophy of education, on principles of method, and on school organization and management. Notwithstanding the limitations of the book, it advocates a surprisingly large number of the educational principles now generally regarded as valid.

Comenius's somewhat narrowly religious conception of school education is manifest in the opening chapters, in which the necessity for school education is demonstrated as follows: Man is the highest and noblest of God's creatures (chap. 1) destined to live throughout an eternity (chap. 2), for which this life is but a preparation (chap. 3). This preparation consists in the development of learning, virtue, and piety (chap. 4). Though the germs of these are implanted within us (chap. 5), their full development can be brought about only through education (chap. 6), and this can be accomplished most satisfactorily in schools where the young are educated in common (chaps. 7 and 8). After advocating the school education of girls (chap. 9), and a school curriculum comprehensive enough to afford instruction in "the principles, the causes, and the uses of all the most important things in existence" (chap. 10), he proceeds to point out the defects in the school-work of his time. Referring to Luther's de-

sire that schools should be founded for boys and girls of even the poorest classes, and that pleasant methods of instruction might be devised, he continues: "Where are those universal schools and where is that attractive method? It is evident that nothing has been done, since in the smaller villages and hamlets no schools have been founded. Where schools exist they are not for the whole community, but only for the rich." In these "The study of the Latin language alone (to take this subject as an example), good heavens! how intricate, how complicated, and how prolix it was!" (chap. 11). In the next chapter Comenius introduces his own system by which he claims that:

I. "All the young shall be educated (except those to whom God has denied understanding).

II. And in all those subjects which are able to make a man wise, virtuous and pious.

III. That the process of education, being a preparation for life, shall be completed before maturity is reached.

IV. That this education shall be conducted without blows, rigor or compulsion, as gently and pleasantly as possible and in the most natural manner . . .

V. That the education given shall not be false but real, not superficial but thorough; that is to say that the rational animal, man, shall be guided not by the intellects of other men but by his own; . . . shall acquire the habit of genuinely understanding and making use of what he learns.

VI. That this education shall not be laborious but very easy. The class instruction shall last only four hours each day."

Defects in school-work he ascribes to lack of order. "The art of teaching demands nothing

more than the skilful arrangement of time, of the subjects taught, and of the method." In his conviction "that that order, which is the dominating principle in the art of teaching, . . . can be borrowed from no other source but the operations of nature," he manifests the influence of Bacon, though the principle followed in the construction of his system is really that of analogy and not that of the Baconian inductive method. He approaches nature "in the character of a pupil who listens to all that his master has to tell him," and not "in that of a judge who compels witnesses to reply to the questions which he sees fit to propose." In chapters 16 to 19, inclusive, Comenius claims through this reference to nature to arrive at principles which will guide in teaching certainly, easily, thoroughly, and quickly. Nine or ten principles are formulated for the attainment of each of the first three of the above ends. Each of these principles, in order that it may have as firm a basis as possible, is derived ostensibly from the observation of nature. "Since this basis," says Comenius, "can be properly laid only by assimilating the processes of art as much as possible to those of nature . . . we will follow the method of nature, taking as our example a bird hatching out its young." Each principle thus derived is found to be applicable in several ways to school-work. The discovery and formulation of each principle is followed by illustrations of its application in other callings. "If we see," says Comenius, "with what good results gardeners, painters, and builders follow in the track of

nature, we shall have to recognize that the educator of the young should follow in the same path." Then under the heading 'Deviation,' he shows wherein school-work has hitherto not been in accordance with the principle in question. Finally, under the heading 'Rectification,' he instances particular applications of the principle to the improvement of school-work. The following from Comenius's discussion of his first principle for teaching surely, will serve as an illustration.

1. "*Nature observes a suitable time.*—For example: a bird that wishes to multiply its species does not set about it in winter, when everything is stiff with cold, nor in the summer, when everything is parched with heat—but in the spring, when the sun brings back life and strength to all.

Imitation.—In the same way the gardener . . . does not plant in winter . . . nor in summer . . . but in the spring, when the moisture is beginning to rise from the roots and the upper part of the plant begins to shoot. . . . In the same manner the careful builder must choose the right time for cutting timber, burning bricks, laying foundations, etc.

Deviation.—In direct opposition to this principle, a twofold error is committed in the schools. (I) The right time is not chosen. (II) The exercises are not properly divided. . . . 'As long as the boy is still a child he can be taught. . . . As soon as he becomes old it is too late. . . . The season of youth must therefore be chosen.

Rectification.—We conclude, therefore, that

I. The education of men should be commenced in the springtime of life.

II. The morning hours are most suitable for study.

III. All the subjects that are to be learned should be arranged so as to suit the age of the students, that nothing which is beyond their comprehension be given them to learn."

Proceeding in this manner the other principles for teaching with certainty which he discovers are:

2. Selection beforehand of the best books, materials, programs, methods.

3. Preparation of the pupil's mind for the lesson.

4. Taking up only one topic at a time.

5. Leading the pupil first to understand, then to memorize.

6. Teaching general outlines first, then details.

7. Careful graduation of the work.

8. Avoidance of interruption or disturbance.

9. Avoidance of evil companions and unsuitable books.

His suggestions for teaching *easily* are no less apt.

1. Begin early. 2. Prepare the mind for each lesson. 3. Teach first outlines, important points, then details. 4. Proceed from easy to difficult. 5. Avoid making lessons too difficult. 6. Proceed slowly. 7. Adapt the work to the age and mental characteristics of the child. 8. Teach everything through the medium of the senses. 9. Lead pupils to make use of

what they have learned. 10. Use the same method in all lessons.

Similarly, in order to teach *thoroughly*, he recommends: 1. Teach only what is of practical value. 2. Permit no digressions or interruptions. 3. Lay a good foundation by (a) arousing interest, (b) giving first the main outlines. 4. Have the main outlines thoroughly mastered. 5 and 6. Lead pupils to appreciate the logical connection of the facts and their relation to the central subject. 7. Proceed from cause to effect. 8. Let the pupils learn the reasons for the facts learned and constantly compare the facts learned in different exercises. 9. Lead pupils to realize the use of what has been learned. 10. Review constantly. The principles for teaching *quickly* are arrived at through a somewhat different plan.

In the remaining chapters Comenius discusses helpfully methods of teaching the sciences, arts, languages, morals, and piety. He then outlines his plan of school organization: the Mother School, Vernacular School, Latin School, and University; the course in each occupying a period of six years. The titles indicate sufficiently the nature of the work in each school.

The little effect which Comenius's views had upon actual school-work must be explained by the troubled condition of the times, the period of the devastating Thirty Years' War.

In 1658 was published at Nuremberg Comenius's 'Orbis Pictus,' a revised and simplified edition of the 'Janua,' profusely illustrated. This, the first illus-

trated text-book ever published for children, attained an even wider popularity than the 'Janua,' and is referred to by Goethe as being in use even in his time. Each lesson follows a picture. The number attached to the name of each object in the text corresponds to that attached to its representation in the picture.

From the close of the seventeenth to near the middle of the nineteenth the educational writings of Comenius seem to have fallen into oblivion. It was only in the 40's of the latter century that the 'Great Didactic' was discovered and republished.

CHAPTER XX

THE ENLIGHTENMENT

THE passions inflamed by the religious controversies of the Reformation period spent themselves in the devastating Thirty Years' War of Germany, the Huguenot Wars in France, and the Civil War in England and the reaction which inevitably follows upon extremes began. From a condition bordering upon fanaticism many passed into one of indifference towards matters of religion. As interest in theology declined, interest in the great and promising fields of scientific investigation mapped out by Bacon became more general. The interminable and fruitless controversies over theological questions had created a hunger for truth and certainty that found peculiar satisfaction in the mathematical and natural sciences.

The exclusively literary courses of the grammar schools shared in the disrepute into which theology had fallen. For this reason the traditional school-work suffered a decline.

The efficiency of mathematical reasoning as a means of revealing the truths of nature was brilliantly demonstrated in the discoveries of Galileo and Newton. Clear and mathematically accurate knowledge of knowable things came more and more to be the aim of the educated classes and the reason was exalted

as the faculty through which alone this end could be attained. The period thus characterized is known as that of the Enlightenment. In proportion as the reason was exalted, the emotional side of man's nature, which had been so much stimulated in the earlier humanistic and religious movements, was neglected. It is with good reason that Locke in the preface to his 'Essay on the Human Understanding' speaks of his as "the *knowing* age." Learning no longer consists merely in the mastery of the classical languages and literatures. "The commonwealth of learning," he continues, "is not at this time without master-builders, whose mighty designs in *advancing the sciences* will leave lasting monuments to the admiration of posterity."

So radical and thorough-going was this movement that it has left its lasting impress upon various aspects of the life of the age. Whereas systematic arrangement and careful attention to form are of the first importance in the reasoning process, the emotions are in their very essence tumultuous and irregular. It is not then to be wondered at that the works of Dryden and particularly of Pope, the representative English poets of this period, should be remarkable not only for lack of true feeling but for regularity and nicety of form. The same formality is noticeable not only in art and architecture but in manners and dress. Countries of a regular, level surface like Holland were considered more beautiful than rugged Switzerland or Scotland. The gardens of the time were laid out in geometrical designs. Trees were clipped into

spheres, cubes, cones, and other definite forms. In the universities mathematics, physics, and chemistry held sway. The abounding faith in the efficiency of the human reason is shown in the universality of its application. Spinoza's great work on ethics consists of a series of demonstrated propositions closely resembling in form a treatise on geometry. While Paley in his 'Natural Theology' demonstrated with would-be mathematical precision and finality the doctrines of revealed religion, Thomas Paine, an American, in his book named significantly 'The Age of Reason' (the age was clearly cognizant of itself) claimed to demonstrate their falsity.

CHAPTER XXI

ENGLISH EDUCATIONAL WRITERS OF THE SEVENTEENTH CENTURY

Milton.—The influence of this rationalistic movement, commonly known as the Enlightenment, is evident even in the Puritan Milton's brief 'Tractate on Education.' Amidst the dangers and adversities which beset the Puritan poet and scholar under the Restoration he acted as tutor to his nephews. As was to be expected from the character of his genius, the course of study he proposes is truly cyclopean in its plan. It combines the new mathematical-scientific studies with those not only of the humanistic but of the medieval curricula. 'Truly, as Milton himself concludes, this educational scheme "is not a bow for every man to shoot that counts himself a teacher." He thinks only of the education of boys and those only of the upper classes. That his views were, however, essentially in harmony with those of the most enlightened of his age is manifest not only in his great definition of "a complete and generous education" as "that which fits a man to perform justly, skilfully, and magnanimously all the offices both private and public of peace and war," but in many other passages of like tenor. Though he demands of the student a thorough knowledge not only of Latin

and Greek but also of Hebrew, Chaldee, Syriac, and Italian, yet these are to be studied not for their own sake, but for the knowledge and culture which they mediate. "And though," he continues, "a linguist should pride himself to have all the tongues that Babel cleft the world into, yet, if he have not studied the solid things in them as well as the words and lexicons, he were nothing so much to be esteemed a learned man, as any yeoman or tradesman competently wise in his mother dialect only."

Along with Latin grammar of the first stage (he does not discuss elementary instruction) are studied arithmetic and geometry. In the second stage agriculture, physics, geography, natural history, botany, physiology, geology, anatomy, medicine, and land-surveying, not only modern but classical writers on most of these subjects being read. The readings in poetry were correlated with the above subjects. The third stage included ethics, economics, politics, theology, church history, Italian, Hebrew, Chaldee, Syriac, histories, heroic poems, elocutionary exercises based upon the study of tragedies and orations. In the fourth stage logic, rhetoric, poetics, composition, and oratory. Throughout the course music was studied as a recreation, and there was to be plenty of physical exercise, fencing, wrestling, military drill, horseback riding. Travel in England and abroad was recommended.

The subjects of this curriculum have been enumerated at length, for, impracticable though it seems, it served apparently as a model for the courses of in-

struction in the Dissenters' 'academies' (Milton's proposed school was the first to bear this name) which soon after made their appearance in England and later in America.

Locke.—The determination of the character and method of education upon rationalistic principles, i.e. through the exercise of reason and common sense alone, utterly disregarding tradition, is well illustrated in the educational writings of John Locke, the great English philosopher. At the request of a friend he wrote a series of letters setting forth his views as to how the son of the latter might best be educated. These were afterwards revised and published under the title 'Thoughts on Education.' Locke's views though narrow, considering as they did the needs only of the upper classes, were remarkable for their wholesome common sense and for their freedom from the influence of mere custom.

The maintenance of good physical health is considered to be the question of fundamental importance in human education. Twenty-nine sections are devoted to the discussion of such matters as clothing, diet, sleep. The hardening method is recommended. He urges "that children be not too warmly clad, winter or summer." "I will . . . have his shoes so thin that they might leak and let in water, whenever he comes near it." Through the following 117 sections Locke discusses training in morals and manners. He emphasizes the importance of the formation of habits and the influence of example. Locke's treatise differs from those just discussed in that its

subject is not school education in particular but rather education in all its aspects. Learning he considers of minor importance. "Seek out somebody that may know how discreetly to frame his manners; place him in his hands where you may, as much as possible secure his innocence, cherish and nurse up the good, and gently correct and weed out any bad inclinations and settle in him good habits. This is the main point, and this being provided for, learning may be had into the bargain, and that, as I think, at a very easy rate, by methods that may be thought on."

The 'methods' which Locke refers to and which he proceeds to elaborate, consist mainly in giving the lesson exercises the character of games. The first reading lessons are carried on with the aid of cards and dice. Interest is to be maintained through the use of amusing pictures and entertaining reading matter. Latin is to be learned by use in the manner recommended by Montaigne. There is to be no drudgery with grammar. Learning Latin in this way "at the same time he might have his mind and manners formed, and he be instructed to boot in several sciences, such as are a good part of geography, astronomy, chronology, anatomy, besides some parts of history, and all other parts of knowledge of things that fall under the senses and require little more than memory." Attention is to be paid to the mastery of the mother tongue. "Since 'tis English that an English gentleman will have constant use of, that is the language he should chiefly cultivate."

"Besides," continues Locke, "what is to be had

from study and books there are other accomplishments necessary for a gentleman, to be got by exercise." As the most important of these he mentions dancing, music, fencing, riding, gardening, and working in wood.

The scope of Locke's view of education was determined largely by the position he occupied as superintendent of the education of the sons of two successive Earls of Shaftesbury. Like Montaigne and Milton he has in mind the children only of the upper classes. Nevertheless in his masterly yet plain and matter-of-fact discussion of the ends and aims of education he contributed much to the reform of courses of study and of methods in the schools. His influence, like that of Milton, was especially marked in the new class of schools, the academies, which social and religious conditions led the Dissenters to establish in England and America.

CHAPTER XXII

THE NON-CONFORMIST MOVEMENT IN ENGLAND: ITS INFLUENCE UPON EDUCATION

Rise of the Academy.—The Puritans and the Separatists, the oppression of whom in England had led to the colonization of New England, were victorious in the Civil War, and were dominant throughout the period of the Commonwealth and the Protectorate. But the reaction leading to and following upon the Restoration was religious as well as political. The state church regained its power and oppressive laws were passed against Non-conformists. By the Act of Uniformity in 1662 clergymen and schoolmasters were required to assent to everything in the Book of Common Prayer. Upon refusing many hundreds lost their livings. At the same time Non-conformists were denied admission to the English public schools and universities. The necessity thus laid upon them of providing some means of higher education of their youth for both lay and clerical careers led to the establishment of a new type of educational institution. It was but natural that the new school should be modeled in some degree after the plan outlined by Milton, whom they considered

as their co-religionist, in his 'Tractate.' That such was the case is indicated by the fact that the name 'Academy,' the union of the secondary school and the university in one institution and an encyclopedic curriculum are features common to Milton's ideal school and to the schools established by the Non-conformists.

Cromwell had attempted to found a university with the confiscated property of the see of Durham. The project was nipped in the bud, however, by the Restoration. Richard Frankland, who had presided over the institution, opened a private school at Rathmill near Giggleswick which may be considered the first of the Non-conformist academies. Others soon sprang up elsewhere.

Being new institutions unburdened by tradition, the academies were better able than the grammar schools to give attention to mathematical, scientific, and other studies adapted to the needs of the times. The Miltonic comprehensiveness of the courses in some of these schools is illustrated in the case of an academy at Sherillhales in Shropshire kept by John Woodhouse. Among the subjects taught by Mr. Woodhouse were mathematics, natural philosophy, rhetoric, logic, ethics, anatomy, Latin, Greek, Hebrew, English, besides work introductory to law and theology.

One of the most eminent of the earlier heads of these academies, the Rev. Charles Morton, emigrated to Massachusetts in 1685. His teaching was remarkable for the fact that he "read all his Lectures, gave all his Systems, whether Philosophy or Divinity,

in English; had all his Declaimings in the English Tongue."

Some of the most eminent men of the time were trained in these academies, among others even the two great Churchmen, Bishop Butler, author of the 'Analogy of Religion,' and Thomas Secker, Archbishop of Canterbury, also Matthew Henry, Joseph Priestley, the discoverer of oxygen, and Isaac Watts, the great hymn writer. A poem addressed by the latter to Thomas Rowe, his former teacher in the academy at Newington, expresses the spirit of freedom from the shackles of tradition which characterized the new schools.

"Custom, that tyranness of fools,
That leads the learned round the schools
In magic chains of forms and rules!
My Genius storms her throne.
No more, ye slaves, with awe profound
Beat the dull track nor dance the round.
Loose hands and quit the enchanted ground;
Knowledge invites us each alone."

The following lines by the same writer refer vaguely to the cultivation of the natural sciences which distinguished the academies from the older grammar schools.

"Swift I survey the globe around,
Dive to the center through the solid ground,
Or travel o'er the sky."

Watts himself wrote a treatise on astronomy widely used in English and American academies, also a text-book on logic and a book called 'The Improvement of the Mind.'

CHAPTER XXIII

THE PIETISTIC MOVEMENT

THE somewhat extreme and exclusive cultivation of the reason during part of the seventeenth and eighteenth centuries brought about a reaction known particularly in Germany as the Pietistic Movement. But while a reaction against the 'Enlightenment' so far as the latter implied neglect of religion, it was in some of its aspects in harmony with it, particularly in so far as it was a revolt against the merely formal religious life of the established churches. It demanded that religion should be not merely a matter of doctrinal belief and of ceremonial observance but a personal experience, and that it should be brought into intimate living connection with everyday life. To those participating in the movement, the welfare of the soul, the practice of the virtues in an upright, Christ-like life became the great central topics of thought. The religious emotions that had been so much neglected were again experienced with so much the greater intensity. The joy of communion with God, the realization of his favor and approval, were sources of happiness with which no others were to be compared. The aims of the schools established under the influence of this movement were predomi-

nantly religious. Here again the reaction went, as usual, to extremes.

Francke.—August Francke (1663-1727), the leader of the movement in Germany, established schools for the very poor, the aim of which was "to lead the children to a living knowledge of God and Christ and to train them up to a thorough Christianity." From three to four of the seven daily school hours were given to instruction in religion. Much attention was given to prayer; not only teachers but pupils were required to pray "from the heart." Worldly pleasures were discouraged. There were no holidays. Play was forbidden to all the pupils. Teachers were to show the pupils "its vanity and foolishness and how through it their hearts were drawn away from God to the injury of their souls."

Religious Revival in England and America.—The reaction against the prevalent formality and deadness of religious life manifested itself in England in the Methodist movement before the middle of the eighteenth century. At about the same time a wave of religious revival known as the Great Awakening swept through the American colonies. The influence of this religious movement upon school-work will be noted in the next chapter.

CHAPTER XXIV

THE DEVELOPMENT OF PUBLIC SCHOOLS IN AMERICA

THE influences producing the changes in religious and intellectual life which mark the eighteenth century in England and Europe were felt also in America.¹ In New England, indeed, there were additional forces operating to bring these changes about. Here the decay of religious life was hastened by the fact that under the semi-theocratic form of government the privileges of church membership were so great as to attract the unprincipled and the self-seeking as well as the sincere. Here, also, the concentration of the energies of the people upon the task of developing the resources of a new continent was an additional factor contributing to the growing indifference toward the humanistic studies.

As the grammar school, owing to the causes just mentioned, declined a new class of schools arose, modeled and named after the academies of England, and like them affording through their much broader curriculum an education better suited to the needs and tastes of the times.

¹ On foreign influence, see Report Com. of Ed., 97-98, Vol. I, p. 591.

Franklin.—As early as 1743 Benjamin Franklin had outlined a plan for an 'English School.' The work prescribed for the first three classes was mainly that of the old reading school (see p. 212), while the fourth, fifth, and sixth classes were to study the subjects customarily taught in the writing school, namely, penmanship, English composition, and mathematics. In addition to these, however, history, geography, rhetoric, natural philosophy, and English literature were to be studied. The work centered about training in speaking and writing the English language. The plan was thus for an institution of equal rank with the traditional grammar school in which Latin and Greek were to be replaced by the mother tongue and useful sciences. The plan was not acted upon until 1750, and then, in deference to the wishes of some of the contributors, it was modified so as to include in addition to the English a Latin and a mathematical school. Systematic favoritism on the part of the directors for the second of these at the expense of the other two called out a vigorous protest from Franklin in his old age. Finally the Latin School was incorporated with an advanced school of philosophy into a college, while the English School, called henceforth the academy, a name applied originally to the three schools, assumed definitely a secondary rank. Dr. Smith, the first Rector of the Latin School, in his 'Account of the College and Academy of Philadelphia,' refers to the latter as follows: "The second branch is properly an English academy and consists of two parts; an English and writing

school, and a school for the practical branches of the mathematics, drawing, etc."

The influence of English models in determining the name and character of the American academy is traceable in the establishment of the earliest of these institutions by Samuel Phillips at Andover. He was an earnest student of the writings of Doddridge, Matthew Henry, and Watts, all famous teachers or students in English academies. With the establishment of another great academy at Exeter by John Phillips, an uncle of the founder of the Andover academy, the new institution may be considered as fairly launched in America. The name became popular and was applied to a great variety of schools, private as well as public.

ELEMENTARY SCHOOL INSTRUCTION

The meager opportunities for elementary school instruction among the early colonists have already been noted (p. 224). The schools were practically all private enterprises, supported usually by the fees paid by the pupils.

Of the teachers of this time, Christopher Dock, a pious Mennonite who taught school among the German colonists of Pennsylvania, is believed to have exercised an important influence on colonial school-work. His 'Schul-Ordnung,' in which he sets forth his methods and aims, is probably the earliest book on school education published in America. His teaching activity centered about instruction in letters and numbers, religion and morals. Beginners were

taught their letters by the alphabetic method in the ABC or spelling class, from which they passed into the New Testament class. The monitorial system was employed. "When I find that the little ones are good enough at their reading to be fit to read the Testament, I offer them to good Testament readers for instruction."

Notwithstanding the fact that the pupils were of different denominations much attention was paid to religious instruction. They were taught to pray and to sing hymns and psalms. Scriptural passages were not only read but their meaning was discussed. "As it is the case that this thought is also expressed in other passages of Holy Writ these are found and read and then a hymn is given containing the same teaching. If time remains all are given a short passage of Scripture to learn." During the dinner hour, "as they are usually inclined to misapply their time if one is not constantly with them, one or two of them must read a story of the Old Testament while I write copies for them."

Frequent appeals to public opinion largely obviated the necessity of corporal punishment. "Those who know their lesson receive an 'O' on the hand. This is a mark of excellence. . . . Any one having failed in more than three trials a second time, is called 'Lazy' by the entire class, and his name is written down. . . . This denunciation of the child hurts more than if I were constantly to wield and flourish the rod."

During twelve years Dock taught in the two town-

ships of Skippack and Sollford, three days weekly in each school. His utilization of correspondence as a means of education is one of various evidences of his originality and intelligence. "The pupils in Skippack, when I went to Sollford, gave me letters, and when I returned, the Sollford pupils did likewise. . . . I doubt not, if two schoolmasters . . . were to do this in love of God, it would bear fruit."

Unfortunately the teachers of the time did not all possess the character and high ideals of Christopher Dock. Many of them were mere adventurers leading a half-vagabond life. A writer on 'Early Education in Georgia' speaks of the itinerant teacher as "appearing during periods in rural communities, bringing in a red-spotted bandanna handkerchief his household goods, and in his tall, whitish-furred, long-experienced hat a sheet of foolscap, on which was set down what he called his 'school articles.' . . . Within some months . . . with the same bandanna and hat, noiseless as he had come, he went his way. Generally he was unmarried, or, what was not so very far different, followed by a wife as unique-looking as himself." Owing to the lack of any system of certificating teachers or of state control of schools, school-work in different communities was much more unequal even than it is to-day.

Charity Schools.—It was during this period and in connection with the Pietistic movement in Europe that the great work of providing through charity schools for the education of the poor was inaugurated. Francke and many of his disciples established

schools for the poor at the close of the seventeenth century (see p. 251). Even earlier than this schools for the secular and religious instruction of the poor had been established in Wales. A similar work was carried on in France under the leadership of La Salle. (The difficulties which he encountered led to the establishment of a Seminary for Schoolmasters which may be considered the first normal school.) Indeed "during the last quarter of the seventeenth and the first quarter of the eighteenth century there was exhibited an activity in relation to the education of the poor which . . . may be regarded as little else than extraordinary." In 1699 the English Society for Promoting Christian Knowledge resolved "to further promote that good design of erecting Catechetical schools in each parish in and about London." The first parochial charity schools were opened in 1702. There are indications that this charity school movement spread to America along with the religious movement with which it was connected. In 1740 a building was erected in Philadelphia to accommodate the audiences of the great English evangelist and preacher, Whitefield, and also a charity school.

Sunday Schools.—It was this general interest in providing school instruction for the poor that led to the establishment of Sunday schools in England. The instruction was secular as well as religious. Under this plan the pupils were enabled to attend school and at the same time earn their living by their labor on week-days. The first school of this sort to attract general attention was established by Robert

Raikes in Gloucester. This institution was introduced into America. By some the schools were denounced as Sabbath-breakers. In 1791 Dr. Rush organized 'The First Day or Sunday School Society of Philadelphia.' In the preceding year the Methodist and the Universalist conferences at Philadelphia had recommended that churches open schools where on Sunday children could learn to read, write, cipher, and sing psalms. In 1794 Mr. Peter Colt of Paterson, N. J., was "authorized to employ a schoolmaster to teach the children of the factory on Sundays" at a compensation of "ten shillings a week."

RECOGNITION OF RELATION BETWEEN UNIVERSAL SCHOOL EDUCATION AND POLITICAL FREEDOM

Although these early attempts to disseminate the benefits of school instruction proved inadequate and aroused interest, as a rule, only in the larger centers of education, yet the far-seeing statesmen and thinkers of the time were clearly alive to the peculiar importance of universal school education to the welfare of the rapidly developing commonwealths of America. John Adams returns to the subject again and again; "Liberty," he writes, "must at all hazards be supported . . . and liberty cannot be preserved without a general knowledge among the people. . . ." The preservation of the means of knowledge among the lowest ranks is of more importance to the public than all the property of all the rich men in the country." He foresees the necessity of something like our present state systems of school education.

“The instruction of the people in every kind of knowledge that can be of use to them in the practice of their moral duties as men, citizens, and Christians, and of their political and civil duties as members of society and freemen, ought to be the care of the public, and of all who have any share in the conduct of its affairs, *in a manner that never yet has been practised in any age or nation.* The education here intended is not merely that of the children of the rich and noble, but of every rank and class of people, down to the lowest and the poorest. It is not too much to say that *schools for the education of all* should be placed at convenient distances and maintained at public expense.” “The whole people must take upon themselves the education of the whole people and must be willing to bear the expenses of it. There should not be a district of one mile square without a school in it, not founded by a charitable individual, but maintained at the expense of the people themselves.”

Jefferson strove energetically to bring about the establishment of a state system of schools in Virginia. Referring to a proposed law he writes, “But of all the views of this law none is more important, none is more legitimate than those of rendering the people the safe, as they are the ultimate guardians of their own liberty. . . . The people themselves, therefore, are its only safe depositories. And to render even them safe their minds must be improved to a certain degree.”

On the peculiar importance of universal education

to a people under a republican form of government Madison is no less emphatic. "A popular Government without popular information or the means of acquiring it, is but a prologue to a farce or a tragedy; or, perhaps both. Knowledge will forever govern ignorance: and a people who mean to be their own governors must arm themselves with the power which knowledge gives."

CHAPTER XXV

THE NATURALISTIC MOVEMENT. ROUSSEAU

THE views of most eminent thinkers of this period upon education, as well as upon other social and political questions, were influenced more or less by the French writer Rousseau.

If the religious indifference of the Enlightenment led to the reaction represented by the Pietistic movement, its excessive regard for form, the repression of the emotional impulses, the unquestioning faith in reason as the one guide to truth and happiness, the artificiality and conventionality of the period led to a reaction in favor of simplicity and naturalness far-reaching in its influence upon the political and social life of the time. Especially marked was its influence upon educational thought, for then, as ever, conventionality and conservatism were nowhere more marked than in the schools. The great preacher of this movement, Jean Jacques Rousseau, he who advocated the application of its principles to the political and social life of the time, was the author of a treatise on education called '*Émile*,' perhaps the most brilliant and entertaining that has ever been written. The keynote of the treatise is given in the opening paragraph.

"Everything is good as it comes from the hands of the Author of Nature; but everything degenerates in the hands of man. He forces one country to nourish the productions of another; one tree to bear the fruits of another. He mingles and confounds the climates, the elements, the seasons; he mutilates his dog, his horse, and his slave; he overturns everything, disfigures everything; he loves deformity, monsters; he will have nothing as Nature made it, not even man; like a saddle-horse, man must be trained for man's service—he must be made over according to his fancy, like a tree in his garden."

As even these few lines show, the work was written under the impulse of the feelings rather than of the reason. Impetuosity of style, exaggeration, paradox, inconsistency characterize the work throughout. Everything artificial and conventional is to be avoided, and the child is to be brought into close contact with nature; no swaddling clothes, go-carts, nor toys, but fruits and flowers. From five to twelve the training is to be almost exclusively that of the muscles and the sense-organs. The sense-training, however, extends to the study of music, drawing, and geometry, all taken up inductively. "For myself, I do not profess to teach geometry to Emile, but it is he who will teach it to me." Fresh air, freedom of movement, knowledge of his powers and of their limitations through actual experience with nature are the great desiderata. No training in formal politeness, no commands, no books, no verbal lessons are given, for these are artificial rather than natural.

Nature is to be the teacher, and the teacher is to be little more than a pedagogue in the original sense of the term. The important matter during this period is "not to gain time but to lose it. . . . If you could bring your pupil sound and robust to the age of twelve years without his being able to distinguish his right hand from his left, from your very first lessons the eyes of his understanding would be open to reason."

By the age of twelve, according to Rousseau, the child's strength exceeds his needs and desires, and the surplus may be employed in intellectual education. This is to be limited to those subjects for which man has a natural taste and which are useful. The pupil is to acquire knowledge for himself, "is not to learn science, but to discover it." In the study of objects through direct observation and experiment the body is to be employed as well as the mind. Each pupil is to learn an honorable trade. Much attention is paid to the training of the judgment through leading the pupil to decide matters for himself. Certain subjects are to be passed by altogether. "He does not know the name of history, nor what metaphysics and ethics are." According to Rousseau, the individual in his growth passes abruptly from one definite period of development to another. Physical development begins at five, intellectual at twelve, and moral at fifteen.

Few writings have aroused so immediate and widespread an interest as did those of Rousseau. On social and political as well as educational questions he

voiced a revolt that had slowly but surely been gathering strength in the minds of the thinking classes against the superficial formality, the narrow and one-sided intellectualism of the times.

Among the other artificial features of the age passionately denounced by Rousseau was the sharp contrast between the conditions in which the different classes of society lived. This was especially marked in France. On the one hand the boundless luxury and privilege of the nobility; on the other, the toil, the poverty, and the oppressive taxation of the peasantry.

INFLUENCE OF POLITICAL REVOLUTIONS UPON SCHOOL EDUCATION

In Rousseau's attack upon artificial class distinctions we note an early indication of those great movements of the eighteenth and nineteenth centuries which were to place the supreme power in the hands of the common people, and thus make indispensable the establishment of universal school education. The tendency toward a more natural state of society, toward a recognition of the natural rights of men, found expression not only in the writings of Rousseau, but later in great political upheavals, such as the American and the French revolutions. These great events are of the highest importance in the history of public school education. Through the successful assertion of the rights of men as men they brought forward the laboring classes, which had hitherto possessed no direct political power. Thus they

greatly extended the need of education. The foundation of the new and great democracies in America, England, and France brought to the front the great problem of making possible the government of the people by the people, and thus made public education a question of grave national importance. The Fathers of the American Republic, as we have seen (see pp. 258-260), were clearly aware of the special importance of general education to the new nation whose ways they were seeking to establish.

CHAPTER XXVI

PESTALOZZI: HIS LIFE, ITS CIRCUMSTANCES AND ITS AIMS

IT was at this juncture, when the placing of government in the hands of the masses had made universal school education imperative, that the apostle of common school education appeared in the person of Pestalozzi.

Hitherto schools had been looked upon as institutions existing mainly for the middle and upper classes. Courses of study were planned and treatises on education were written in view of the needs only of the few. Even so democratic a writer as Rousseau had recently written: "The poor man has no need of an education, for his station in life forces one upon him, and he could receive no other."

The oppressed and downtrodden condition of the Swiss peasantry aroused the compassion of Pestalozzi, and the amelioration of their lot became the aim of his life. Born in Zürich, where he was left fatherless at an early age, his vacations were passed with his maternal grandfather, a village pastor. The penury and hardships which he witnessed in accompanying his grandfather on his rounds left an indelible impression on his mind. During his college course in his native city his enthusiasm for the cause

of the oppressed and the poor was intensified through association with kindred spirits. It was probably in the pursuit of this great aim of his life that he made unsuccessful attempts to establish himself in the professions of the law and of the Christian ministry. Possibly the same purpose had some influence in leading him to engage in agriculture. Meeting with reverses and failure in this enterprise, Pestalozzi turned directly to the work that lay ever nearest his heart, the improvement of the condition of the poor. In his large but only half-completed farmhouse he established a sort of industrial institution for waifs and orphans. After a somewhat precarious existence for six years this too proved a failure. The next period of Pestalozzi's life from 1780 to 1798 was passed in extreme poverty and distress. During these years he continued to brood over the same problem. One product of this period, the story, 'Leonard and Gertrude,' shows not only how thoroughly he understood and sympathized with the people whose condition he was trying to improve, but it indicates the means by which, in his opinion, this improvement was to be accomplished, namely, through intelligent home and school education.

Stanz.—In 1798 the new revolutionary government found it necessary to establish quickly an asylum at Stanz to care for the orphans of those who had fallen in resisting its authority. Pestalozzi, with his cherished aim in view of improving the condition of the poor through education, eagerly undertook the management of the institution, setting aside offers of

more remunerative and less difficult positions. Thus began a period of educational activity which terminated only with his death.

The character of his work and the spirit with which it was carried on are best indicated in his own words:

"I was still without everything but money when the children arrived; neither kitchen, rooms, nor beds were ready to receive them. At first this was a source of inconceivable confusion. . . . Most of the children on their arrival were very degenerated specimens of humanity. Many of them had a sort of chronic skin disease, which almost prevented their walking, or sores on their heads, or rags full of vermin; many were almost skeletons with ragged, care-worn faces, and shrinking looks; some brazen, accustomed to begging, hypocrisy, and all sorts of deceit; others broken by misfortune, patient, suspicious, timid, and entirely devoid of affection. . . .

"We wept and smiled together. They forgot the world and Stanz; they knew only that they were with me and I with them. We shared our food and drink. I had neither family, friends, nor servants; nothing but them. I was with them in sickness and in health and when they slept. I was the last to go to bed and the first to get up. In the bedroom I prayed with them, and, at their own request, taught them until they fell asleep."

Burgdorf, Yverdun.—The government was soon forced to close the institution temporarily. When it reopened Pestalozzi was not reinstated. Neverthe-

less, his brief experience at Stanz not only confirmed his faith in education as a means of elevating the condition of the lower classes, but it intensified his interest in the problem of the nature, the aims, and the methods of elementary school-work. With some difficulty he secured the privilege of pursuing his investigations and experiments in the schools of Burgdorf. Here his enthusiasm and unselfish devotion, as well as the originality and soundness of his educational doctrines, attracted public attention and drew to his side a number of able and earnest assistants. The school developed into a training school for teachers. The government needing the castle the use of which they had granted to Pestalozzi, he removed the school to Yverdon. Here for a while it flourished and became an institution of international fame. Lack of wise and strong supervision and dissensions among the teachers weakened it, however, and led ultimately to its dissolution. Soon after Pestalozzi died.

THE NATURE OF PESTALOZZI'S SERVICES TO THE CAUSE OF SCHOOL EDUCATION

Pestalozzi, notwithstanding his deficiencies as a thinker, as a teacher, and as an administrator, occupies in the history of non-professional school education a position of commanding importance. His life marks the beginning of the great modern era in elementary school-work. Hitherto liberal school education had been a privilege restricted mainly to the upper classes. But the growing recognition of the

rights of men as men, as expressed in the American and French revolutions, resulted in placing supreme power in the hands of the common people. This made universal school education so important and so indispensable that its maintenance and direction became more and more a great function of the state. Side by side with this rise in the political status of the laboring classes, and in part because of it, there went on a movement for their social and economic betterment. It was into this great movement that Pestalozzi threw himself with singular enthusiasm and fixity of purpose. Early convinced that education was the only means of elevating the condition of the poor, he entered into the work of applying it and adapting it to their own needs with characteristic whole-heartedness and persistency. The problem which he faced was practically a new one. Montaigne, Milton, and Locke discussed the educational needs only of their own class. Where the reformers had made elementary and intermediate school-work their chief concern, they had in mind chiefly the middle and upper classes, and their work consisted mainly in modifying and supplementing the traditional classical curriculum so as to make it more adequate to the attainment of the purposes, social, religious, or otherwise, which they had in mind. This holds true of Ratke and even of Comenius.

Pestalozzi approached the problem from a quite different standpoint. He was concerned primarily with the needs of the poor, those hitherto neglected by educational reformers or thought of only sec-

ondarily. His task was, therefore, not the modification of the traditional course of study, but that of outlining a course of instruction and training that would most contribute to the improvement, intellectual, moral, and physical, of the lower classes.

Such a problem led at once to the investigation of the fundamental principles of education. The existing schools for the classes had their venerable and firmly rooted traditions to guide them. With Pestalozzi seeking to utilize school and home education in the attainment of his great aim, both matter and method were yet to be found.

PESTALOZZI'S VIEWS AS TO THE NATURE AND METHOD OF EDUCATION

The capacities essential to intelligent, upright, and happy life he believed to lie innate in every human being. It was the task of education to unfold these. True education is a process of natural development like the growth of a tree. The exercise necessary to the unfolding of these innate capacities is afforded through interaction with one's ordinary environment. Hence the character of the pupil's instruction and training was to be determined by his needs in the condition of life in which he was placed.

The home was the educational institution which occupied the first place in the mind of Pestalozzi. The school was only supplementary. True education being a natural process, the method of instruction must be adapted to the nature of the child,

and the exercises and studies must follow a natural and necessary order.

In place of exclusive occupation with printed words, things themselves were to be studied through direct observation. Knowledge was to be acquired through the child's own activity. Sense perception was recognized as the great medium for the acquisition of knowledge. Concrete objects rather than abstractions were studied. Though we learn through sense perception, what we learn is made available for use in the form of language. Hence exercises in language were considered an important part of school-work.

Along with these principles, the application of which has done so much to further the cause of school education, Pestalozzi advanced others which time has shown to be erroneous. In his attempt to suit instruction to the mind, he attached undue importance to the elements of number and form. Through his overestimation of the educational functions of the home he made the latter too much like a school and the school too much like the home.

INFLUENCE OF HIS WORK IN EUROPE

Pestalozzi's theories were first put into practice on an extensive scale in Germany. Here the interest in elementary school education, which was in part a product of the Pietistic movement, but which had declined, sprang suddenly into vigorous life in the struggle of the nation to free itself from the domination of Napoleon. Like Athens of old, Germany

sought the recovery of her prestige and solace for her military misfortunes in triumphs in the fields of intellectual achievement. And she wisely judged that an intelligent and enlightened people could best achieve and maintain political independence. Under the leadership of Fichte and others, a vigorous movement for retrieving the national misfortunes through general education was inaugurated. Teachers were sent to Pestalozzi's school at Yverdun to learn his principles and their application.

PESTALOZZI'S INFLUENCE UPON SCHOOL-WORK IN AMERICA

Pestalozzi's ideas were adopted more slowly in France and England. They were introduced into the United States in a variety of ways. One of the first Americans to become interested in Pestalozzi's work at Yverdun was William Maclure, a philanthropist of Philadelphia. Pestalozzi being unwilling to come to America, Maclure in 1806 made a contract with Joseph Neef, one of the earliest of Pestalozzi's assistants and disciples, guaranteeing his traveling expenses and his salary for three years. For some years Neef conducted a school in and about Philadelphia. Toward the close of his life he had charge of the school of the New Harmony community in Indiana. Reports on Pestalozzi's work by various American travelers and translations or discussions of Pestalozzian writings were not infrequent. But the times were not yet ripe for the widespread adoption of Pestalozzian practice in America. It was not until the third or fourth decade of the

nineteenth century that the people of New England began to realize the necessary connection existing between democratic government and universal education, so much emphasized by Adams, Jefferson, Madison, and other founders of the republic (see pp. 258-260). This resulted in a wider interest in the theories and the practice of Pestalozzi. A vigorous movement for the improvement of school-work in Oswego led to the engagement in 1861 of Margaret Jones, of London, who was to instruct in Pestalozzian principles and methods. Her place was taken the following year by Herman Krüsi, the son of one of the ablest of Pestalozzi's teachers.

The emphasis laid by Pestalozzi upon the acquisition of knowledge through the senses led to the development in England of school exercises known as 'object-lessons,' in which the pupils were led to note the various qualities of objects presented to them. In many instances these exercises became as mechanical and as mind-benumbing as anything which Pestalozzian methods had displaced. They were a feature of Pestalozzian instruction when it first obtained a wide vogue in America.

Notwithstanding these errors, the underlying truth of the Pestalozzian method, namely, the superior efficacy of instruction based upon direct observation and adapted to the needs, the circumstances, and the capacities of the child, was not lost sight of. Its application greatly improved the character of school-work particularly in primary arithmetic, geography, and nature study.

ligion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged." The clause of this ordinance setting aside lands for the maintenance of schools was inserted in the acts creating the various states formed within not only the Northwest Territory but also the territories later acquired through purchase or conquest. Since 1853 the amount of land the Federal Government has granted for school purposes to the various states as they were created has been doubled, two sections, 16 and 36, being set aside for this purpose. In all, 67,893,919 acres have been devoted in this way to the establishment of a fund for the maintenance of public schools.

The successive constitutions of the various states show by what slow and painful steps the legislators arrived at a knowledge of effective methods of applying to the purposes of universal education the appropriations made by the Federal and the state governments. In many instances, as has already been noted, state aid was afforded in such a way as to mark the poor as objects of charity, all who were able being required to pay fees. The constitutions adopted from 1835 to 1850 manifest the influence of the educational Renaissance which characterized that period. From the middle of this period on provision is made in a steadily increasing number of states for the adequate support, by state and local taxation, of schools *free to all, rich and poor alike*.

CHAPTER XXVIII

DEVELOPMENT OF FREE SECONDARY AND ADVANCED EDUCATION

The High School.—This establishment of free elementary schools, more or less supported and supervised by the state, made practicable universal education. The consequent development of elementary school-work soon wrought a change in the character of secondary schools. The academies, the successors of the classical grammar schools, were in the main private institutions supported wholly or in part by fees. Hence their students came for the most part from the wealthier classes, and the school-work aimed chiefly at the preparation of these for college. The extension of elementary school instruction, particularly among the poorer classes, created a demand for secondary schools, free and tax-supported like the elementary schools, but affording such advanced instruction as would meet the needs of that large proportion of the people who would never obtain a college education. It was in response to this demand that the high school came into existence. The vigorous growth of this institution has largely displaced the older academy, and has made it incumbent upon the newer school not only to afford such non-professional instruction as will meet the needs of the

mass of the people but to serve as a preparatory school for colleges and universities. The difficulty of adapting high school courses to these two ends has been much lessened through changes in the entrance requirements of higher institutions of learning.

Like other great institutions, the high school came into existence by steps so gradual that its origin can be referred to no year or even decade. Certain states, such as Ohio, New Hampshire, Iowa, and California, provided by law for the establishment of high schools in the 40's and 50's. In other states provision was made by school boards for public secondary education without waiting for explicit legislation on the subject. Their right to do this was tested in the famous Kalamazoo School case, in which certain citizens applied to the courts to restrain the collection of such portion of the taxes assessed against the complainants for the year 1872 as was voted for the support of the high school in that village, and for the salary of the superintendent. The court supported the action of the board of education. In the judicial opinion upon this question, the eminent jurist, Thomas Cooley, states: "We supposed it had always been understood in this state [Michigan] that education, not merely in the rudiments but in an enlarged sense, was regarded as an important practical advantage to be supplied at their option to rich and poor alike, and not as something pertaining merely to culture and accomplishment to be brought as such within the reach of those whose accumulated wealth enabled them to pay for it."

State Universities.—The idea of a complete system of schools, provided by the state and including at one extreme the primary school and at the other the university, was realized through the establishment in nearly all of the younger states of state universities, supported by the state, and affording tuition to residents either gratis or at a nominal charge.

CHAPTER XXIX

IMPROVEMENTS IN EDUCATIONAL PROCEDURE IN SCHOOLS

Froebel.—The work of Pestalozzi in making public school-work more efficient by placing it upon a sound and rational basis was continued through the efforts of two great educational geniuses, Froebel and Herbart, each of whom came in early life under the direct personal influence of the older reformer.

Froebel's influence is perhaps most manifest in the prevalence in America and elsewhere of the Kindergarten. The name, an English translation of which has unfortunately not come into general use, well indicates the distinguishing characteristics of the institution. Several of the important educational principles carried out in kindergarten work have been applied in and have increased the efficiency of elementary and higher school work.

Froebel was born in 1782 in the picturesque Thuringian forest. Neglected by his father, a Lutheran clergyman, and by his stepmother, and deriving little or no benefit from the schools he attended, Froebel was apprenticed to a forester. Left much to himself with a considerable library in the lonely forester's cottage, he here developed, no doubt, that love of nature and that tendency to mys-

ticism and to metaphysical speculation which later distinguished him as a thinker and writer. Later a year or so of rather desultory work at the University of Jena was followed by employment in various clerical positions in the civil service and on private estates. In 1805 he went to Frankfort to fit himself for the profession of architect. Here he became acquainted with Dr. Grüner, an eminent Pestalozzian and headmaster of the Frankfort Model School. Persuaded by Grüner to accept a position as teacher, he felt that he had finally found a calling for which his talents fitted him. Writing to his brother of his first lesson he says: "It seemed as if I had found something I had never known, but always longed for, always missed: as if my life had at last discovered its native element. I felt as happy as a fish in the water." Two years of successful work confirmed this view and made Froebel an ardent and diligent student of the whole problem of human education. To better fit himself for his life work he spent two years as student and tutor in and about Pestalozzi's school at Yverdun. With the same purpose in view he continued his interrupted academic education at Göttingen and Berlin. During a year of service as a volunteer in the struggle against Napoleon, Froebel fell in with two kindred spirits, Middendorf and Langehal. Soon after the closing of the war the waxing enthusiasm of these three in the cause of education found vent in the establishment of a school at Keilhau. After some initial difficulties the school proved a success, at first educationally and afterwards, under

the management of Barop, financially. In 1832 Froebel established a similar institution at Willisau in Switzerland. Three years later he was made director of the orphanage at Burgdorf, which thirty years before had been the scene of Pestalozzi's labors. Here the difficulties encountered in instructing the children entering the school led Froebel to notice defects in the home education, and stimulated his interest in the problem of the training of children under school age. This problem came more and more to monopolize his attention. His endeavor to solve it issued finally in the establishment at Blankenburg in 1840 of the first kindergarten. The remainder of his life was devoted mainly to lectures upon the principles of kindergarten work and to the training of teachers (chiefly women) for the work.

Froebel's educational and metaphysical doctrines are so interwoven that it is scarcely possible to give the merest sketch of the former without some reference to the latter.

According to Froebel there lives and reigns in all things an eternal law ('Ed. of Man,' § 1). This law is based upon an omnipresent, self-conscious unity, God, who lives and reigns in all things. The essence of each thing is this divine effluence within it. It is the destiny and life-work of everything to reveal its essence, i.e. God, in its external and transient being. The aim of human education is to enable man to do this and to raise man into free, conscious obedience to this divine principle within him (§ 5). Man exists in a state of continuous devel-

ment (§ 16). In order that each human being may understand the past and present he must pass through all preceding phases of human development and culture. Development is the result of exercise, not, however, of any exercise, but only of such as is adapted to the nature of the organism to be developed. Hence, in order to select exercises truly educative for the child we must first ascertain the characteristics of child nature. In his determination of these Froebel manifests keen insight. Among them are sense activity, physical activity, fondness for construction, ownership, society, variety, tendency to imitate, activity of the imagination. In his kindergarten system Froebel affords abundant exercise to each of these tendencies.

Much of what is most valuable in the Froebelian doctrine is implied in his three principles of *self-activity*, *connectedness*, and *continuity*.

Activity, exercise, we have just noted, must be adapted to the child's nature. Further than this it must be spontaneous, it must spring from within, and it must be that of the whole mind. School education must not as in the past exercise merely the memory and the intellect. It must stimulate also the emotions and the will. The mind must be active not simply in the way of receiving impressions, "making the outer world inner," but it must be active likewise in expression, "making the inner world outer." The importance Froebel attached to this point led him to recount the various natural means of expression,—speech (oral and written), song, movement, gesture,

construction, and drawing. Of these the schools up to this time had used for the most part only one, namely, speech. His influence has contributed to the utilization of the others not only in kindergartens but in elementary and higher schools as well.

Play, Froebel considered a form of activity of peculiar educational efficiency, it being "a representation of the inner from inner impulse." Kindergarten exercises are in the main attempts to make more educative the play activities without making them less interesting. The principle of *connectedness* is of scarcely less importance. The knowledge the child naturally acquires of the world about him out of school constitutes a connected whole; it is not chopped up into parts. In school for purposes of effective study knowledge is broken up into separate subjects. This must not be allowed to obscure in the child's mind the fact that the world is a unity. He must be led to see the connectedness of things. What is learned in one subject must be connected in as many ways as possible with what is learned in another. "The essential business of the school," says Froebel, "is not so much to teach . . . a variety and multiplicity of things as it is to give prominence to the ever-living unity that is in all things" ('Ed. of Man,' § 56).

In his principle of *continuity* Froebel contradicts the view of Rousseau that the course of individual human development consists of a few stages, entrance into each of which is marked by abrupt changes. It consists on the contrary of steady, gradual change.

It is unbroken, continuous. Each stage grows naturally out of the preceding. Since exercise must ever be suited to the nature of the child, it follows that there must be continuity in the course of study and training corresponding to the continuity in the course of development. There must be no sudden breaks. The entire course must be continuous, unbroken.

The first American kindergartens were established in Boston through the efforts of Mrs. Elizabeth Peabody, who visited Germany for the purpose of studying them in 1867. In 1872, Mrs. Boelte, who had studied in Germany with the widow of Froebel, opened a kindergarten in New York. Kindergartens were first incorporated in a public school system in St. Louis under the superintendency of Dr. W. T. Harris in 1873. In 1901 there were 5107 public and private kindergartens in the United States. But, as already noted, the influence of Froebel's doctrines upon American education has extended far beyond the confines of the kindergarten.

Herbart.—Another educational writer who has exerted a powerful influence upon modern school-work is John Frederick Herbart. Like Froebel, he became as a young man deeply interested in the educational reforms of Pestalozzi. He left the University of Jena to become tutor in the family of the Governor of Interlaken in Switzerland. Here he became deeply interested in certain problems connected with the instruction of the young. In 1799 he visited Pestalozzi's school at Burgdorf. Among the earliest of his educational writings are two discussions of

Pestalozzi's views. They are entitled 'Pestalozzi's Recent Work—How Gertrude Taught her Children,' and 'Pestalozzi's Idea of an A, B, C of Observation.' After a few years of preparation at Bremen and at Göttingen for an academic career, Herbart was appointed to the chair of philosophy at the University of Königsberg, made famous by Kant. Happily the duties of the position included the delivery of lectures on education. Into this phase of his work Herbart entered with singular enthusiasm and originality. He established an educational 'Seminar,' and in connection with it a practice school. One of his pupils established a similar institution in connection with the University of Jena, which has ever since remained the chief center for the development, application, and dissemination of Herbartian doctrines.

Herbart's system is distinguished from others in its scientific completeness. It is he who first raised the study of education to the rank of a science.

In seeking to determine the aim of education we must, according to Herbart, call to our aid the science of ethics. This teaches, he finds, that the only thing which is good in itself is the will. The highest conceivable object in life is the development of a good will. This, then, is the single, ultimate end of education.

The method to be followed in the attainment of this end depends, of course, upon the nature of the will and of the mind as a whole. Hence to find it we must have recourse to psychology. One of Her-

bart's great contributions to psychological thought was the doctrine that the mind is not tri-partite, made up of intellect, feeling, and will, but that it is a unity, the three great phases of the activity of which are designated by the above names.

The mind, according to Herbart, develops primarily through apperception, that is, through the assimilation of new ideas by ideas already in the mind. In order to teach a child we must know something of the contents of its mind, so that these may be brought into relation with the new ideas or impressions to be presented.

The character and relations of the ideas possessed by the mind determine the will. But ideas issue in acts of will only as they become suffused with feeling, i.e. in proportion as they arouse interest. Hence it is all-important in education that the interest should be aroused. A good will, in brief, is the aim of education. A good will issues from good ideas properly interrelated, or apperceived and suffused with feeling, that is, with interest. Apperception and interest are thus of primary importance in education. Hence Herbart was led to make a classification of our interests. They are, he finds, of two classes,—(a) those arising from knowledge, (b) those arising from intercourse with others. We may be interested in objects of knowledge in three ways: first, because of the feeling of novelty, of variety, which the object affords; secondly, because of the causal relations of the object; thirdly, because of its beauty. Herbart designates these as the empirical, speculative, and

esthetic interests respectively. The interests arising from our intercourse with others are likewise of three classes: first, the interest awakened by the good or ill-fortune of other individuals, the sympathetic interest; secondly, the social interest or that taken in certain groups, such as the family, the social circle, the fraternity, the community, the nation; thirdly, the religious interest or that in the origin and fate of man.

Not only should these interests be developed, but they should be developed in due proportion. Exclusive attention to any one or two of these results in a one-sided, unbalanced character. The development not merely of interest, but of many-sided interest, is the goal of the educator.

Much of Pestalozzi's influence was due to the fact that he worked through and upon the emotions. This perhaps was necessary to give the movement for popular education a powerful initial impulse. It remained to supplement the educational principles which he set forth, to demonstrate to the reason their validity, and to arrange them in a logical whole. No one has contributed more to the attainment of these ends than has Herbart.

HERBARTIAN INFLUENCE ON AMERICAN SCHOOL-WORK

A goodly proportion of the leaders of educational thought in America during the last two or three decades have been Herbartians trained under Dr. Rein, the eminent Herbartian, at the University of Jena. This, together with the voluminous and attractive Herbartian literature and the tendency which

the Herbartians have always manifested of putting theories to the test in actual school-work, accounts for the influence which Herbartianism exerts upon school procedure in America to-day. This influence, in most respects salutary, manifests itself (a) in the prevalent opinion that school-work exists primarily for the development of moral character, (b) in the attention given to the arousal and development of the child's interests, (c) in the attention paid to questions and discussions preliminary to presentation of new facts, to correlation of studies, and to other means of furthering the apperceptive process, the assimilation of new ideas by old, (d) in the extensive use in the lower grades of folk stories and of the classical literature of primitive stages of civilization. (The epoch theory was developed and applied in school-work by Herbart and his disciples.)

CHAPTER XXX

INFLUENCE UPON SCHOOL-WORK OF THE DARWINIAN THEORY OF EVOLUTION

ABOUT the middle of the nineteenth century the discovery by Darwin of principles which raised the theory of evolution from the status of mere opinion to that of an illuminating scientific hypothesis led to an extraordinarily vigorous and widespread interest in the natural and particularly the biological sciences, and this in different ways affected the theory and practice of school education. In the first place it led to a demand for a larger place for the sciences upon the school curriculum. One of the foremost advocates of this reform was Herbert Spencer. His views as to the importance of science are summarized by himself as follows: "Thus to the question with which we set out—What knowledge is of most worth?—the uniform reply is—Science. This is the verdict on all the counts. For direct self-preservation, or the maintenance of life and health, the all-important knowledge is—Science. For that indirect self-preservation which we call gaining a livelihood, the knowledge of greatest value is—Science. . . . For that interpretation of national life, past and present, without which the citizen cannot rightly regulate his conduct,

the indispensable key is—Science. Alike for the most perfect production and highest enjoyment of art in all its forms, the needful preparation is still—Science. And for purposes of discipline, intellectual, moral, religious, the most efficient study is, once more—Science. . . . And yet the knowledge which is of such transcendent value is that which, in our age of boasted education, receives the least attention.”

Another forceful exponent of the claims of science to recognition in the common schools was Thomas Huxley. While doing justice to the importance of literary training as an element in education, he argues with great cogency for the study in school of the things and forces in nature with which man has to deal. “Suppose it were perfectly certain that the life and fortune of every one of us would one day or other depend upon his winning or losing a game at chess. Don’t you think we should all consider it to be a primary duty to learn at least the names and moves of the pieces? . . . Yet it is a very plain and elementary truth, that the life, the fortune, and the happiness of every one of us, and, more or less, of those who are connected with us, do depend upon our knowing something of the rules of a game infinitely more difficult and complicated than chess. It is a game which has been played for untold ages, every man and woman of us being one of the two players in a game of his or her own. The chess-board is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of Nature. . . . What I mean by Education is

learning the rules of this mighty game. In other words, education is the instruction of the intellect in the laws of Nature, under which name I include not merely things and their forces, but men and their ways; and the fashioning of the affections and of the will into an earnest and loving desire to move in harmony with those laws."

The reforms thus so vigorously advocated have been carried out in America not only in the development of scientific courses in high schools and colleges, but in increase of attention in the elementary school to such subjects as nature study and geography.

The doctrine of evolution has made itself felt not only in a modification of the common school curriculum but in a broadening and deepening of the conception of school education. It has come to be looked upon as a phase of the evolutionary process, a process of more complete adaptation to and utilization of environment. This environment in the case of man is, for the most part, social. Hence the progress of the individual is conditioned by the progress of society and *vice versa*. It follows that the character of the education most valuable for a given individual is determined in some measure by the character, tastes, and pursuits of the society of which he is a member. In this way problems of education have become involved with those of sociology.

GENERAL RÉSUMÉ

As European civilization developed, the need of a knowledge of arts and sciences that would afford pleasant and profitable employment of leisure or would facilitate intercourse, led to the gradual differentiation from the social organism, first among the Greeks, of institutions for affording a non-professional or liberal education. These music and reading schools were private enterprises. Among the later Romans some of the non-professional schools were supported by municipalities and a few by the state. The professional religious schools connected with parish church, cathedral, or monastery were almost the only ones to survive the breaking up of the Roman empire. As civilization revived, these assumed the functions of the secular schools. The growing demand for instruction among the laity was met largely by the establishment of schools in connection with chantries, hospitals, and other religious foundations.

In the great commercial and industrial centers that sprang up in medieval Europe, schools, professional or semi-professional in character, known as reckoning schools (*Rechenschule*) or writing schools, were established. It was in such centers that lay folk-schools developed in response to the need, felt often

by even the poorest classes, of a knowledge of the art of letters. In some localities similar institutions, but presided over by women and known as dame schools, seem to have developed from the crèche or day nursery.

Under the influence of the Renaissance, secular, non-professional schools were established which afforded the leisure classes, particularly in Italy, a liberal education. Though the movement progressed more slowly and assumed a somewhat different character among the peoples of Northern Europe, to whom Roman culture was not in any degree native, nevertheless even here it resulted in the evolution of a new type of secondary school, the classical grammar school, 'Gymnasium,' which aimed primarily to train in the use of the Latin language and in the appreciation of Latin literature. This school first assumed definite form under Sturm at Strassburg. These new educational ideals ultimately revolutionized the work in the older church schools.

Though the doctrines of the Reformation made elementary instruction of even the poorest classes a logical necessity, the attendant religious excitement and political disorder hindered the establishment of schools and gave to the aim and content of school-work a narrowly religious character.

In England school-work was hindered during the Reformation period through the misappropriation of school property in the execution of the Chantries Act. Many schools, however, chiefly classical grammar schools, survived this secularizing process, and their

number was later augmented through private beneficence.

The Calvinistic and Puritan movements, through emphasizing the importance of personal knowledge of the Scriptures, gave an even more pronouncedly religious character to the work of the petty and writing schools and brought them into closer relations with the Church. It was these and the above-mentioned grammar schools which were so promptly and generally established in the English colonies in America, particularly in New England.

In the seventeenth century a highly improved system of organization and of methods of public school-work was elaborated by Comenius. The immediate results of his work were largely nullified, however, by the Thirty Years' War. After the Restoration in England, the application by the triumphant state church of a religious test to candidates for entrance into public schools compelled the Non-conformists to establish secondary schools of their own, which they called 'academies.' The course of study in these was determined less by tradition and more by the needs of the time. Schools of this type and name multiplied in America, where they largely displaced the older grammar school.

The great modern movement for *universal* school education runs parallel with the movements of the eighteenth and nineteenth centuries for the political enfranchisement and the social betterment of the lower classes. A definite beginning of the modern state system of school education is to be found in the

attempts of the Germans in the dawn of the nineteenth century to free themselves from the Napoleonic yoke.

The great pioneer in the secular, non-professional education of the poorer classes was Pestalozzi. Important contributions to the solution of the problems which his new point of view of school education presented have been made by himself, by Froebel, Herbart, and others.

In America the crux of the problem of universal education has been to provide school privileges for all without making invidious distinctions between the poor and the well-to-do classes. The problem was finally solved through making the schools free to all, rich and poor alike.

This successful solution of the problem of providing elementary school education for all classes led to the demand for *secondary* education for all, even the poorest classes. The demand was met by the establishment of the high school, the 'people's college,' tax-supported and free to all. Along with this function, the high school has been forced to assume, especially in the newer parts of the country, a function of the older academies and grammar schools, namely, that of preparing students for the university.

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